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AMERICAN BEE JOURNAL

AUGUST 1939

DISCOLORATION AND LOSS OF FLAVOR IN PROCESSING AND STORING HONEY—V. G. MILUM

OUR HONEY PLANT GARDENS —FRANK C. PELLETT

BUSINESSLIKE BEEKEEPING —GORDON P. DILLON

THE CUCUMBER AND THE BEE —CARL E. KILLION

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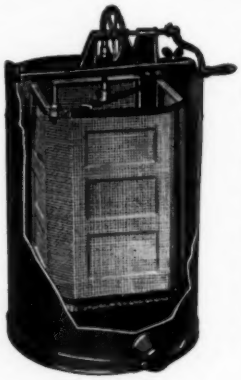

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AMERICAN BEE JOURNAL

The Oldest Bee Journal in the English Language

ESTABLISHED BY SAMUEL WAGNER IN 1861

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American Bee Journal

Vol. LXXIX—No. 8 Hamilton, Illinois, August, 1939 Monthly, $1.00 a year

Clean Honey

THE producer of any food product owes it to his customers to use every precaution to keep it clean. The careless handling of milk by some dairymen has resulted in rigid inspection in many localities and now we are threatened by similar supervision of the beekeepers unless more care is used in the handling of honey.

There has been much complaint of late because of dirty honey. Some large users have substituted other sweets of uniform quality and their markets are lost permanently to the beekeeper. The time has gone by when the public will tolerate careless handling of its food.

The question now is what can be done about it. How can the industry meet the situation and prevent dirty honey from reaching the market? It is a problem in which every honey producer is vitally interested since the price of honey is very sensitive to unfavorable reactions on the part of the buyers.

—ABJ—

Thin Nectar

THERE was a marked change in the quality of the nectar with the coming of the heavy rains in June. The honeyflow opened during very dry weather and gains of the hive on scales at our experimental apiary ranged from ten to twelve or more pounds per day. June brought heavy rainfall and marked humidity. Although the flight of the bees appeared to be equal to that of the early part of the flow the nectar was very thin and the net gains dropped to two to five pounds per day.

Weather is still a matter of major consideration for the beekeeper. A few hours can change the prospect completely.

—ABJ—

Farm Changes

AMERICAN farmers have depended too much upon the export of such cash crops as corn, wheat and cotton and now feel the pinch as the result of a smaller demand from abroad. In effect they have been selling their soil in sending such products away as there has been a constant decline in soil fertility in most sections where such crops have been produced.

It seems probable that in the long run it may prove to the advantage of our agriculture to discontinue the use of such large

We have received a little box containing six two-ounce jars of domestic and imported honeys, prepared for sale by E. Lyn Woodin, Washington, D. C. He sells some twenty-six varieties of domestic honey and twenty-eight foreign ones; the price of the six-bottle collection is 75 cents.

Mr. Woodin's sales plan is interesting. He says: "Customers get a big kick in picking out from the bins the ones they like. Sometimes the colors don't blend and exchanges have to be made, and it is the customer's privilege to be suited. The shop is not a store, but a hobby; and those who go in are treated as visitors. But if they wish to buy, no high-powered salesmanship is used. I tell all that they are under no obligation to buy. It is all so intriguing and so very different from what they have been used to, that they will buy, in spite of themselves."

Mr. Woodin's customers not only enjoy themselves in his shop, but they are really becoming educated to honey buying. Hobbyist-salesmen of this type merit much encouragement.

♦

Two colonies are kept side by side and started into a flow, each with its own supers. Keep the colonies close together. If there is any antagonism between the bees this can be noted, but seldom will any be seen.

Both colonies should be normal and neither one preparing to swarm. After the flow is well started, remove colony No. 1 and set No. 2 in its place. Put all the supers on it. Shake most of the bees out of No. 1 in front of No. 2 and move No. 1 with brood and queen to a new stand.

If the weather is warm, this colony with only a few bees must be well shaded. Colony No. 1 will expand its brood nest rapidly and No. 2 will soon settle down to business. The double working force will gather honey rapidly and there will be one less producing colony to manage.

This plan is useful where single colonies are inclined to crowd the brood nest with honey. Try it on a small scale and see what it will do for you.

T. A. Myers,
South Dakota.

When we see or hear the phrase, "the golden gate," we generally start to think about Saint Peter, but in the present instance I want to send you just a note of an impression I received yesterday of the Golden Gate Bridge and the Bay Bridges as I returned from San Francisco. Our ferry boat had just passed under the Bay Bridge to the west of Buena Yerba Island and I glanced back toward the bridge that spans the Golden Gate. It is a graceful thing. At times the tops of the tall towers supporting the tremendous cables are concealed by a low fog as it drifts in from the Pacific and then the cables look as if they were fastened to the sky as they disappear on our side and reappear on the other.

But the Bay Bridges are truly tremendous. Yesterday I counted seven separate electric trains, each drawing from four to seven cars the size of large city street cars, on one portion of the span at the same time. This was on the lower deck where trucks were traveling east and west in two-lane traffic. On the upper deck, the passenger cars were zooming along about as thick and as fast as they do along a five or six lane boulevard after a baseball game. And to cap the climax, the China Clipper came drifting in and landed alongside the bridge on the way to its base at Treasure Island. It landed on the water without a single bump or splash and then taxied into its harbor.

We could not restrain the comment that we were indeed seeing some of the foremost marvels of the age in engineering achievement.

The above thrills are but a few that beekeepers will get who attend the National Convention in Sacramento November 7 to 10, for the River Lines boats, Delta King or Delta Queen, will go under the same bridge on its way to San Francisco or Treasure Island from Sacramento.

Will you be with us?

J. E. Eckert.

♦

"If the busy bees want to keep away from trouble, they'd better 'steer clear' of Kirkland, Illinois. The village board adopted the following disciplinary measures at a meeting this week:

"It is hereby declared to be a nuisance for any person, firm, or corporation to permit any bees owned by him or in his custody to fly at large throughout or over the village, or through or over any street, alley, or public place in the village, and it shall be unlawful for any person to suffer, permit, or maintain any such nuisance.' "

From a clipping from "Courier News," Elgin, Illinois, June 8, 1939, sent to us by W. L. Ritter.

acreage for cultivated crops. A prosperous agriculture is best built around live stock and legumes which conserve the soil fertility and prevent erosian.

There is little for the beekeeper in a grain producing system and his situation is precarious in such a community. Live stock or dairy farming offer a safer dependence for the farmer and certainly the beekeeper is more secure in such a neighborhood.

The unusual stress of the present pressure of economic changes is responsible for widespread change in farm practice. In some localities we see far better bee pasture as a result, while in others the beekeeper is looking for new locations because the source of his former livlihood has disappeared.

The change from cash crops to diversified farming offers serious problems to those with insufficient capital but the present low prices for grain and cotton will compel the change for a large number of farmers. On the whole the beekeeper is likely to profit substantially by the improved bee pasture which is sure to follow.

———ABJ———

Zofka Clover in Canada

WE are indebted to C. B. Gooderham, Dominion Apiarist, for a report of the wintering of Zofka red clover at Ottawa. After reading of the loss of this clover through winter killing at the American Bee Journal experimental apiary, he made inquiry as to its behavior on the experimental farm at Ottawa and sends us the copy of the following letter from Dr. John M. Armstrong, of the Division of Forage Plants:

> "In response to your request of June 10th I am submitting a brief report on the winter survival of Zofka and Kellner red clover. Of the Kellner (selection from Zofka) strain, 400 plants were established of which 69.8 per cent survived the winter. Of the Zofka 1660 plants were established of which 55.7 per cent survived the winter in a fairly vigorous condition. To afford a comparison with Ottawa red clover I might say that a similar nursery of spaced plants survived 90—95 per cent. On the other hand three lots of clover from France survived only 25 per cent so Zofka is distinctly hardier than such material.
>
> "Zofka and Kellner started to head June 12-15 so it belongs to the two-cut type.
>
> We consider it quite possible to select the better plants of Zofka and build up a strain sufficiently hardy and adapted to our conditions."

In view of the fact that a plot of Zofka red clover in Dr. J. N. Martin's herb garden at the experiment station at Ames, Iowa, wintered perfectly, we are hopeful that the beekeeper's dream of a short flowered red clover suitable for bee pasture may yet be realized.

———ABJ———

A. Z. Abushady

SOMETHING new in a bee book has appeared. This time it is a biography of a famous beekeeper. Leonard S. Harker's "Blazing the Trail," a biography of A. Z. Abushady, was reviewed in our July number.

There have been many books about bees but few about beekeepers and this one records many interesting events and gives us a better understanding of English and Egyptian activities. Abushady was born in Egypt in 1892 but lived in England from 1912 to 1922, returning then to his native country.

It was during the time of his residence in England that he organized the Apis Club and founded the Bee World which made him well known to beekeepers throughout the civilized world. The book is devoted primarily to Abushady's beekeeping activities although he was trained as a physician and devotes himself to bacteriology, with bees as a hobby. As sometimes happens the hobby has outrun the Doctor's business and he is better known as a beekeeper than as a physician.

To those familiar with the Arabic language Dr. Abushady is well known as an author and a poet but little of his poetry has been translated into English. Had it not been for his interest in bees he would likely still remain a stranger to us. He is a versatile person with many interests and a great ideal to promote international understanding and good will.

Most men who are widely known in our industry are recognized for their work with the bees or some new development of beekeeping equipment but Dr. Abushady has attained world wide recognition for his effort to create better understanding among the beekeepers. It is fitting that such a man should be the subject of a biography.

—ABJ—

Wagner's Flat Pea

ABOUT forty-five years ago there was much interest in a new forage crop which had been developed by a plant breeder named Wagner, of Munich, Germany. He was reported as having spent about thirty years in an attempt to improve a wild plant which grows in the higher altitudes of most European countries.

From a bitter wild plant he developed a succulent forage plant, rich in sugar and relished by farm animals. Of special interest to us is the report that it proved to be a valuable honey plant.

The reports indicated also that it would root very deeply in hard, dry and rocky soils and once established be unaffected by drought. Three cuttings of hay equal to four tons of dry matter per acre was the yield. From published accounts of the plant one would assume that it was a valuable addition to the forage crops for areas of poor soil and that the beekeepers secured considerable advantages from its presence, the yield of nectar lasting until October.

Just why this plant failed to become popular we have never been able to learn. Whether it failed to come up to its initial promise or whether farmers were not interested in a substitute for the crops already in use we do not know.

For more than a year we have sought seed of this plant known as *Lathyrus silvestris Wagneri,* and had about given up hope of finding it. At last we have secured a small amount of seed from a correspondent in Germany for planting in our test plots this spring. We hope to see for ourselves whether it has all the good points claimed for it at the time of its introduction many years ago.

In the Indiana association letter for July, Inspector Starkey reports that "Indiana beekeepers will likely harvest less than half the crop obtained last year. Aside from the lack of such abundant supply of clover, there are two reasons for it. The average producer has more bees than at the beginning of last season, having lost almost none in winter, but has only half enough supers to take care of even a normal crop. There are also many in-and-outers who have become discouraged because of low prices. Others have plenty of honey left over. All are neglecting their bees. An average of two supers of comb honey (July 1) not yet entirely finished or 60 pounds of extracted per colony are about the most seen in well-kept apiaries in clover sections to date. However, white sweet clover is just beginning to do its best and will raise the production somewhat. The fall flow to come later may be expected to be at least normal. The blue vine flow of southwestern Indiana will be at its best in August. If beekeepers do not try to rush the market and sell honey cheaper than the other fellow, prices should be higher because of the scarcity of honey."

♦

Poison has reduced the number of bees in each colony in the Yakima Valley, according to George Becker, apiarist, of Sunnyside, who has been studying the effects of poison sprays on bees for several years. The hives on his place contain in the neighborhood of 50,000 bees, and that number is about doubled in the Kittitas Valley hives, where less poison is used. Discussing the manner in which poison kills bees, Mr. Becker said that it is taken into the insect with the honey, and may poison an entire swarm within a week. If there is abundant honey, bees will avoid plants that have been sprayed, he said, but when honey is scarce many are poisoned. I. L. Neill,
Washington.

♦

The production of honey in California has been disappointing with one of the shortest crops on record. Unfavorable weather during orange bloom curtailed the production of this fine quality honey and the crop was about one-fourth normal, the color darker than usual. The crop of California white and extra white sage is a failure. Insufficient rain during the spring months and cold, windy, and foggy weather prevented the bees from getting any nectar. Alfalfa is in production with indications for a normal crop. Arizona white mesquite and cat's-claw are far below normal. (From Honey Trade Letter by Bryant & Cookinham, Inc.)

Tansy leaved Phacelia secretes nectar generously.

From Our Honey Plant Gardens

Bird's-foot Trefoil
Phacelia
Lespedeza
Cleome

Bird's-foot Trefoil

WE hope you read the article in the June issue by Prof. Johnstone-Wallace on "Pasture Improvement and the Beekeeper." He mentions bird's-foot trefoil.

Although bird's-foot trefoil, **(Lotus corniculatus)**, is new to American agriculture, it is very widely distributed in the Old World. Because of its habit of growth it would be difficult to harvest for hay, but it is very desirable as a pasture plant. Instead of upright growth like alfalfa or the clovers, it has a tendency to spread prostrate on the ground with only the terminals turning upward.

It has yellow pea-shaped blossoms which are quite attractive and the flowering period extends over a large portion of the summer months. It seeds freely but the pods form close to the ground which makes them difficult to secure by any mechanical means.

This plant roots very deeply and so is very drought resistant. When shallow rooted pasture plants like bluegrass and white clover are brown and dead, the bird's-foot trefoil remains green and flourishing. It appears to have wide adaptability and is reported as thriving on wet lands where alfalfa would refuse to grow.

Prof. Johnstone-Wallace, of Cornell University, seems to have been the first to call it to the attention of American farmers. Finding it already established in some New York pastures he noted its ability to prosper under adverse conditions and has continued to recommend it for all mixtures of grasses for permanent pastures. It was from him that seed was secured for the American Bee Journal test plot.

We are very favorably impressed with the plant from the few months' observation and look forward to further test. It is said to be a long-lived plant which once well established will insure palatable pasturage for livestock in dry weather when there is a shortage of the common grasses.

We are disappointed in it as a honey plant thus far since the bees have paid little attention to it. However, a small plot is insufficient to offer a fair test and nectar secretion varies so much from time to time that it may later prove of greater attraction to the bees than now is apparent. Yate-Allen in his book on "European Bee Plants" says that it is greedily visited by the bees and is of real value to the beekeeper. He reports finding pollen from this plant in nearly every sample of clover honey.

Because of its drought resistance, we regard the plant as very promising as an addition to our pasture crops and anticipate that it will come into more common use for that purpose. If it proves valuable as a source of nectar here as in Europe, it may eventually add substantially to the bee pasture of a large area.

Tansy Leaved Phacelia

The genus phacelia supplies a number of fine honey plants but in this country they have found but little use otherwise. The tansy leaved phacelia, **(Phacelia tanacetifolia)**, an annual plant which is native to California was introduced into European gardens more than a half century ago. Because of its unusual attraction for the bees it aroused great interest among the beekeepers, especially in England and Germany.

The plant apparently secretes nectar generously and is always covered with honeybees when in bloom. German beekeepers have been instrumental in an effort to find a place for the plant as a farm crop in that country.

While it does not make a satisfactory hay, it has been found to serve very well as a green fodder and also for silage. It has come into use for such purposes to such an extent as to encourage a research program designed to improve it for forage purpose. The question at once arises as to why German farmers can grow it with profit for silage, it may not be of equal use to American farmers for the same purpose.

In our plot the plant lived up to expectations as a source of bee pasture since the bees sought it constantly during its flowering period. However, it appeared to us that mid-western farmers already have more satisfactory sources of silage material. We have not, however, put it to the test of feeding it to animals either in the green state or as silage.

It may have the advantage of providing green feed in times of drought when other feed is scarce It may be worth while to give it further study in an effort to find a satisfactory use for it here. If it should prove of value to the farmers there is every indication that it would be of major value to the beekeeper. It is doubtful whether there is any other plant, excepting sweet clover,

which is more promising for bee pasture.

Lespedeza

There has been much interest in the introduction of new varieties of Lespedeza as farm crops. They are especially valuable on poor soils of acid tendency in the southeastern states. Although Lespedeza is now grown in large acreage in some localities, the beekeeper has usually been disappointed in getting so little honey from the plants. Several different species have been tried, but there are few reports of substantial honey crops from any of those grown as field crops.

We have been somewhat surprised at the attraction for the bees shown by two ornamental varieties. Two of the larger bush clovers, (**Lespendeza bicolor** and **L. crytobotra**), have been eagerly sought by the bees during their entire blooming period and apparently may well be included among the substantial honey plants. Unfortunately the plants are too woody and coarse in their habit of growth to be of any value for forage. It remains that they can be used only for ornament that restricts their cultivation to insignificant proportions.

These come from Japan and are apparently hardy in our northern regions. Bicolor is said to grow to a height of ten feet and the other to about six feet. Judging from the way that bees swarmed over our plants the past summer, beekeepers may well encourage their general planting for ornamental purposes. The blooming period comes rather late in summer when it is very useful following the main honeyflows.

A New Cleome

In times past there has been much discussion of the cleomes in the bee magazines. The spider flower and the Rocky Mountain bee plant have both been recognized as very attractive to the bees. Both have large showy, pink or purple flowers and have been grown widely in ornamental gardens. The Rocky Mountain bee plant is native to the western plains and Colorado beekeepers have harvested good crops of honey from it at times. On one occasion Frank Rauchfuss harvested an average of 116 pounds per colony from this source in a ten days' flow. Such reports encouraged beemen in other sections to do their best to introduce the plant. However, it has not been found useful for any other purpose except for the bees and as an ornamental. The small numbers grown in gardens have helped the beekeeper but little.

There is another cleome, (**Cleome lutea**), with bright yellow flowers which is native to Nebraska and the Southwest. It is a coarse plant growing to a height of seven or eight feet and with a corresponding spread of branches. It flowers very freely in late summer and attracts bees as few plants do. They begin swarming over it at the first break of dawn and continue until late at night. From the number of bees visiting a short row of cleome in the garden one must assume that it is rich in nectar and offers them a rich harvest.

It is of very easy culture and should be far better known among the beekeepers who are interested in ornamental flowers. It is rarely listed in seed catalogs but my son Melvin has saved the seed from our few plants in an effort to supply those interested.

Frank C. Pellett,
Iowa.

New York wild bird's-foot trefoil. A portion of a field of bird's-foot trefoil growing in Albany County, New York.

Requeening During Dearth

Early in September, 1938, I received a shipment of queens for requeening during the anticipated flow from Spanish needle. On account of unprecedented dry weather upon arrival of my queens, I was faced with a tough job of successful introduction. I solved it in this manner: My bees had two standard hive bodies and one half depth super, mostly empty after extracting in mid-July. In most hives the queen and a small amount of brood were in the lower body. I found and killed the old queen, then shook most of the bees from the frames containing brood. I then placed this brood in the other hive body, shaking all bees from the remaining frames in this body. I placed the super over the lower body with the inner cover over the super, then the body containing brood, eggs and caged queen on top of inner cover and covered the hive and did not molest them for ten days. One must be especially careful to keep all frames containing any honey well covered during the operation to prevent robbing.

This plan proved 100 per cent successful for me during the driest September on record here. We had no rain from August 7 to October 17, 1938. Of course the weather must be warm so that the segregated brood will not chill, until the nurse bees can find and cover it again. Any beekeeper who happens to receive queens under the same circumstances may do well to try the plan.

C. V. Reeves,
Arkansas.

ABJ

Moody Brenneman

M. Moody Brenneman, well-known beekeeper and nurseryman of near Berne, Indiana, died on June 28, after having spent more than twenty-five years actively engaged in the keeping of bees.

Born at Goshen, Indiana, on November 12, 1877, he died at the age of 61 years, 7 months and 16 days. Death came after an operation for appendicitis. Mr. Brenneman was the proprietor of the Riverside Nursery and Apiary, and, at the time of his death, operated about 125 colonies of bees. In the past, he has had at one time about 300 colonies.

Mr. Brenneman has been an occasional contributor to American Bee Journal, his articles being drawn from his vast knowledge of bees and bee behavior much of which has been gained through actual experience. His son, Frederick, also a beekeeper will carry on with the work.

H. Vaughn Shoemaker.

Improving the Quality of Extracted Honey

By R. Selwyn Wilson,

Idaho.

IN my locality the best honey is gathered early in the season from the first bloom of alfalfa, though sometimes there is no surplus from this source, but the later honey is darker generally and also poorer quality. To get a larger proportion of this early and better honey requires bees which build up strong and fast for the early honeyflow. I have found Carniolan and Caucasian hybrids better than Italian bees here for this, also deeper brood combs and upper entrances promote better wintering, more rapid building up and more powerful colonies.

The leading causes of poor honey here are extracting honey too green, poorly strained honey, overheated honey as from capping melters, especially where honey is extracted from old black combs, and also putting honey from dandelion, greasewood, and choke cherry in with good honey. It is also true that the soil in some localities simply doesn't produce best grade honey.

The bee pastures here has gradually become poorer during the last twenty-five years owing to alfalfa and sweet clover having partially exhausted certain elements in the soil which the production of good honey requires, and the quality of honey in some cases appears poorer, especially if dandelion honey is not properly handled and dandelions are much more numerous, since the soil has become more acid.

To strain the honey I have a pipe leading from the uncapping table into the extractor and from there into a settling tank located outside in the warm sun and which holds four days' extracting of honey and which is rather long and divided into two parts by a partly circular center partition.

The honey from the extractor enters the first compartment a little below the surface of the honey, gradually moves to the farther end and is taken from the bottom of the first compartment and placed on top of honey in the second compartment by a syphon and then gradually comes back to the end of tank from which it started but in the second compartment. Another syphon then takes the honey from the bottom of the second compartment of the settling tank and transfers it to a tank built into the end of the building, which is kept entirely away from bees by a door swinging upward and a window which allows the strainers to be plainly seen at all times.

The first strainer is a pail strainer like the Alexander so as to be easily dumped on the cappings and cleaned but the second is large and made of fine brass cloth and must be held up from the bottom of the tank to allow complete draining. It also has a baffle plate part way up its sides to delay clogging.

I have three-inch pipe and gates and uncap in large square tubs with a lot of large holes in the bottom and a false bottom of hardware cloth laid on a couple of new bottom bars for frames. The next morning I place the tubs containing cappings in a compartment warmed by the sun, something like a solar wax extractor, and when well drained dump in a flat tank and let the bees clean them out after stirring up with some water or melt by the sun and use the remaining honey for spring brood rearing, as I do not believe in heating honey for market till a bottler has to.

To clean honey in settling tank dump in capping bench and convey to strainers direct. This keeps bees out of honey cans and is the method I like best for straining the thick honey here.

Have honey in continuous motion from extractor to cans so no candying takes place and fix tanks so honey will back up and stop extractor reel before a careless person can run tanks over.

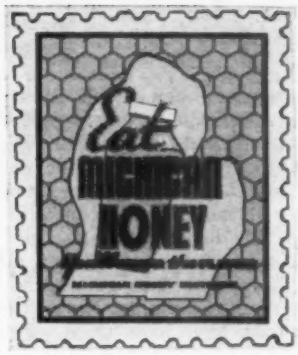
Don't extract foulbrood honey.

Don't use second hand cans.

Don't sell honey you are unwilling to eat yourself.

I find selling honey in sixty-pound cans at retail is a mistake as it deteriorates at times before used and better satisfaction is had through using smaller containers for retail. In swapping honey for various farm produce, groceries, gasoline, haircuts and various other things, I have been able to get many people to use honey who would not otherwise do so. If the honey is good, they are apt to buy again, but not otherwise.

So honey, like other things, sells mostly on a basis of quality and satisfaction in competition with its competitors and advertising won't long boast the sale of a regularly poor product.



New Michigan Sticker

The Michigan Honey Institute has adopted this sticker for the use of members to be placed on honey packages and to be used in advertising and in correspondence. Michigan and Illinois are both doing work that is much needed to further the use of their own honey within their borders. Since there seems to be no conflict with the work of the American Honey Institute, these state organizations, adding to the very effective honey publicity and research from the national office under Mrs. Grace, will swell the total of honey advertising to the point where the increasing use of honey will eventually do much to stabilize a now badly muddled market.

—ABJ—

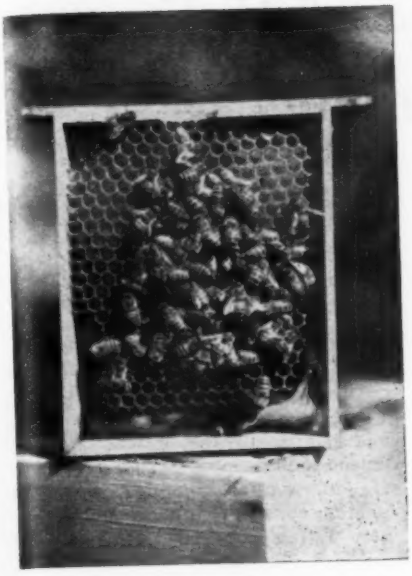
The Laying Queen

Last July, Rev. Walter described a method of introducing a queen into a colony with laying workers. He says, "In introducing the queen into the colony of the laying worker, I shook the bees through a queen excluding zinc. I think I found the laying worker and killed her."

I do not believe Rev. Walter could find a laying worker by this method, because the thorax of the laying worker is the same as that of any worker. The larger thorax on the queen prevents her passing through an excluder. The abdomen can easily pass through the openings in the excluder.

Since Rev. Walter's method requires three days for introduction and it is necessary to mutilate a good comb, he would have to ruin a lot of combs or spend five weeks using one comb to requeen twelve colonies. Neither method would be good beekeeping practice. I am also opposed to the "cage-in-comb" method of queen introduction, because it ruins good brood combs.

J. W. Bogart,
Tennessee.



Those Baby Nuclei

By G. H. Cale,

Photos by James C. Dadant.

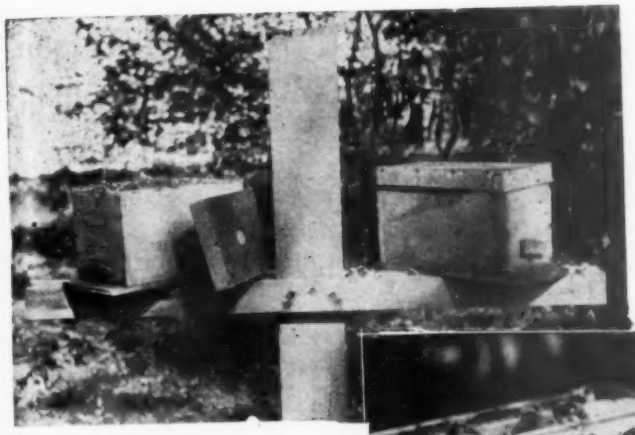
sertion of a queen cell when distributing without opening the nucleus and for filling the division board style feeder quickly and conveniently.

The section combs are four by five plain sections cut down narrower with top cleats to serve as topbars. These fit into notches in the box sides so they are always spaced in position and the top fits down evenly about them.

We provision the boxes, when foundation is used, with single and the drift of bees last but a short time. In storage the equipment takes little room and it is easily established again the following season.

Two nuclei boxes are fastened in opposite positions on a cross piece at the top of a stake which is driven into the ground or fastened to a tree or post. Spiders get bad about them and may frequently have to be brushed away and the webs removed, but as one is often handling the nuclei in queen rearing this is not a disadvantage.

It must be remembered that the amount of brood room for egg laying in these small compartments is decidedly restricted and therefore if mated queens that have begun to lay well are to be kept in reserve for future colony use, they must be taken from the baby nuclei and given to full frame nuclei or otherwise kept in laying condition until they are needed.



Top, left, a section comb from baby nucleus. Opposite left, two nuclei on posts, facing at angles.

Below, division board style feeder, kept filled constantly. With plenty of feed, the bees stay put.

Right, baby nucleus opened —five combs and a feeder.

IF I am correct, the use of the baby nucleus started with Pratt (Swarthmore) in Pennsylvania but this style of queen mating unit has not been used by breeders to any extent, notable exceptions being Jay Smith in Florida and Herman McConnell in Illinois. We have previously described the system of queen rearing used by McConnell and must again say that it is an original variation of the fundamental Doolittle method which is ahead of anything we have seen so far.

The baby nuclei shown here are some of those we have been using with success and are copied from those used by McConnell. The nucleus box holds five section combs and a small division board feeder. Holes in the box cover allow the insections of brood cut from colony combs. After the nucleus combs are once drawn and used this is not so necessary. Bees are measured into each nucleus from a supply brought from an outyard so they will not drift away. If no cells are available caged laying queens are given each nucleus to release and provide brood until ripe cells are distributed. Nuclei so prepared and closed over night, will seldom become depleted and usually last through the season for queen mating purposes.

Some features of the baby nucleus are quite an advantage. Queens are easy to find, they mate quickly and the nuclei are easy to maintain with few supporting colonies. In the fall the bees and brood may be given to yard colonies

If queens are mailed on order, the restricted laying in the small nuclei is a favorable factor since there is less likely to be damage to the queens from the sudden stoppage of egg laying, often thought to be a detriment to mail order queens that are taken from larger laying quarters.

Honey Discoloration and Loss of Delicate Flavor in Processing and Storage*

By V. G. Milum,

Illinois.

WHILE the literature on the subject of processing honey or heating to prevent granulation and fermentation is full of danger signals, warning against carelessness and improper methods and limits of temperature due to the possibilities of discoloration and loss of flavor, the importance of the darkening or discoloration of honey together with the correlated loss of the delicate flavors while being held in storage both before and after processing, is a matter in honey handling that has not received proper attention. Most beekeepers who have kept samples of honey for any length of time eventually have learned that the samples were becoming darker in color and considerably stronger in flavor. This is a serious phenomena which occurs when honey is stored at high temperatures which has no relation to the original processing temperature, except that the temperature of processing may actually accomplish a part of the results that might later obtain in storage.

As a result of definite experiments with honey samples stored for a year at constant temperatures of 40°F., 60°F., 80°F., and 100°F., Wilson and Marvin (12) of the Wisconsin Experiment Station, in 1931, called attention to the deteriorating effects of storage of honey at high temperatures. They stated that samples stored at 40°F. and 60°F. did not change in color, while those at 80°F. became slightly darker and were inferior in taste to those stored at 60F. Their samples stored at 100°F. "changed from water white honey to almost amber and lost much of the delicate flavor of the honey." 1. After another year of storage, they (13) reported that samples stored at 80°F. for two years showed a decided change in color and flavor.

Lothrop and Paine (6, 7, 8, 9) in 1931 to 1933, Paine, Gertler and Lothrop (10) in 1934 and Ramsay and Milum (11) in 1933 discussed possible factors affecting or causing discoloration as a result of storage at high temperatures. DeBoer (2) in 1934 stated that changes occurring in honey during heating take place likewise during storage. Lynn, Englis, and Milum (4) in 1936, gave the results of further observations on honey discoloration. The facts as presented by these various authors were apparently not widely read or understood for more recent writers in discussing the matter of honey storage give little or no attention to the matter of storage temperature.

Although the writer has long known that serious losses to honey occurred in storage, it was not until we conducted some actual tests with sets of similar samples stored at various constant temperatures, that the writer realized the full importance of the matter of storage temperature from the standpoint of discoloration and consequent loss of delicate flavor. Furthermore, as we

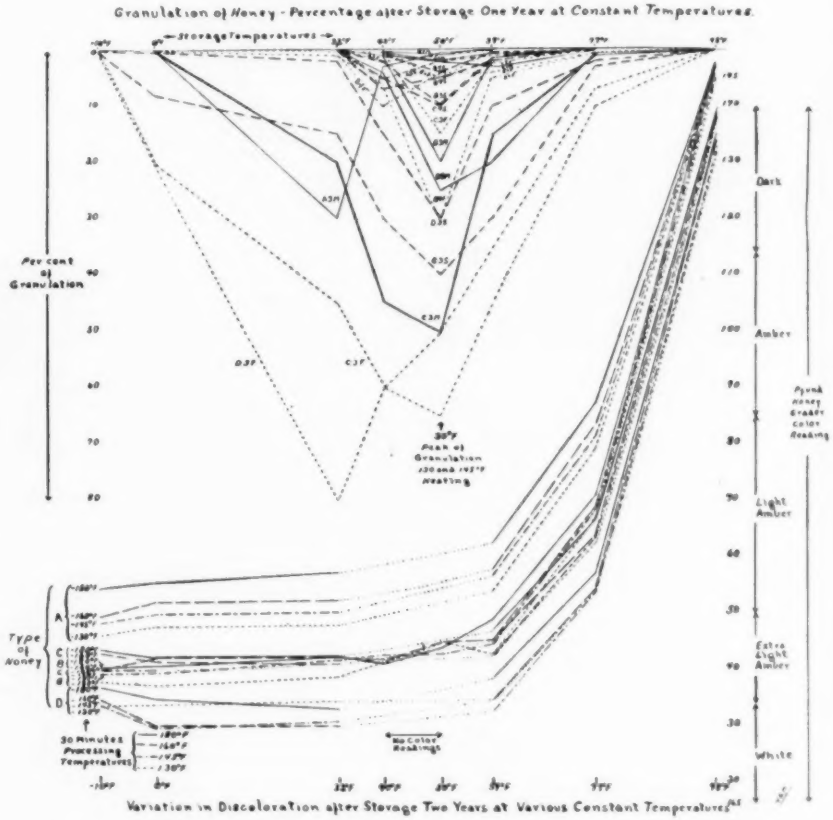


Figure 1. At top—Percentage of granulation of four different honeys after storage for one year at the constant temperatures indicated at the top. D—Capped summer honey, predominantly sweet clover; C—Uncapped summer honey; B—Capped fall honey, largely heartease; A—Uncapped fall honey. Variations in the type of graph lines indicate the type of strainer used as also the letter labelling of each curve, (- - -F) indicates straining through silk bolting cloth of 83 mesh or strands to the inch, (——M) refers to the outing flannel milk strainer with 46 primary strands per inch, while (- - - S) indicates a strainer of sugar sack toweling of 46 strands per inch. The figures 3 and 4 of the granulation curves indicate, respectively, the heating temperatures of 130°F. and 145°F. for 30 minutes, there being only traces of granulation with 30 minutes processing temperatures of 160°F. and 180°F. (Shown in tabular form in the previous article of this series.)

At bottom—The variation in discoloration of a part of the same samples of honey shown in the top graph, after storage for two years at the various constant temperatures from (-10°F.) to 98°F.) indicated at the bottom. All 30 minutes processing temperature (130°F., 145°F., 160°F., 180°F.) are shown but only the straining with sugar sack toweling included, there being practically no differences in discoloration due to the type of strainer used. Due to heavy granulation at 40°F. and 50°F., color readings at these temperatures were omitted.

*Contributions from the Entomological Laboratories of the University of Illinois, No. 206.

1—Wilson, H. F. and Marvin, G. E., 1931. Am. Bee Journ., 71:22-23.

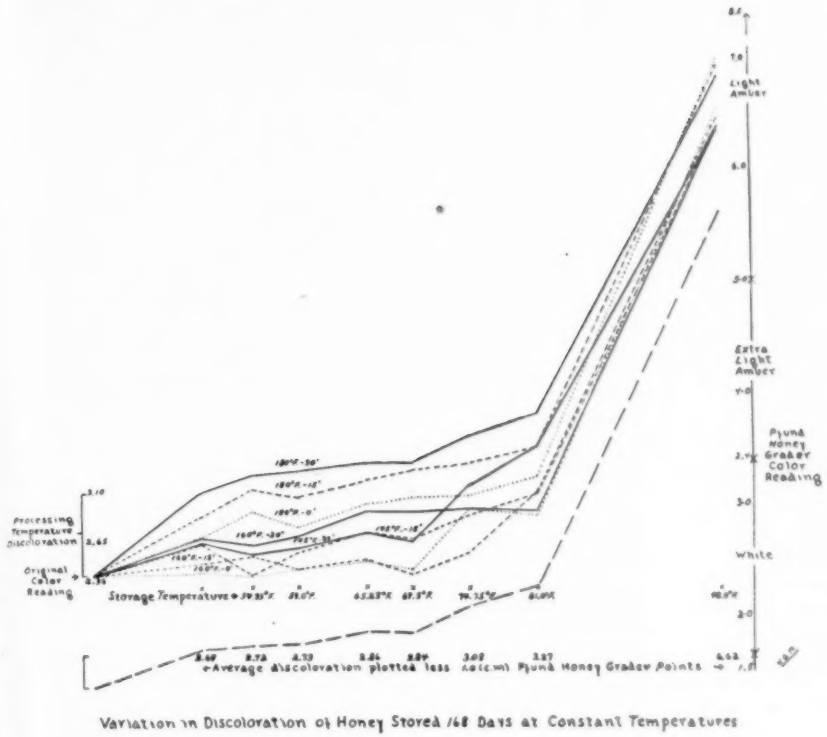


Figure 2—Variation in discoloration of similar portions of a honey stored for 168 days at variable constant temperatures, with each line representing a particular processing temperature and time, as indicated by the figures above the line, i. e., that at the top being the color readings of the samples processed at 180°F. for 30 minutes before being stored.

have had opportunity to exhibit the actual experimental samples before groups of beekeepers at various meetings, widespread interest and amazement have been manifested because of the somewhat astounding results. This first set of experiments started under the supervision and direction of the author in 1934 to show the effects of various processing temperatures, types of strainers, and storage temperatures upon granulation of four different samples of honeys were reported in tabular form by Milum, Lynn and Crum in 1935 (5). A graphic picture of the effect of the various factors on granulation as then shown has since been prepared by the writer and is shown in the top portion of Figure 1. The effect of the original heating and the temperature of storage upon the discoloration of honey during a period of two years is shown at the bottom of Figure 1.

In the experiment shown in Figure 1 four different types of honey were subjected to processing for 30 minutes of 130, 145, 160, and 180°F., then strained through three different types of strainers and stored at constant temperatures of minus 10, 0, 32, 40, 50, 59, 77 and 98°F. The top portion of the chart indicating the amount of the granulation shows that only the heatings of 130 and 145°F. for 30 minutes were not sufficient to prevent granulation at the optimum of 50°F. for granulation suggested by the results. (See also Tables 2, 3, 4, 5 of preceding article of this series). Other writers have indicated 50°F. to 65°F. as the limits for good granulation, with 55°F., suggested by Dyce (3) as optimum for average honeys. Another point not clearly shown by the graph was that the strainer with the finest filter pore helped to reduce granulation in samples that had apparently not been sufficiently heated to melt all crystals.

While all the granulation is shown in the upper portion of the graph, only the color readings of one type of strainer (sugar sack toweling) is shown in the discoloration curves, the type of strainers having no effect on discoloration as shown by similarity of corresponding samples. Although the original heating did cause some slight discoloration as indicated by the difference in the vertical levels of the more or less horizontal lines at temperatures from minus (-) 10°F. to 59°F., this increase in color is comparatively small or insignificant as compared to the increase in color of all samples of honey at temperatures used in the experiment above 59°F., namely 77°F. and 98°F. Since the interval between 59°F. and 77°F. is rather wide, one may surmise that if smaller intervals of storage temperature were used this sharp upturn in the curve of discoloration would occur at about 65°F.,which according to the evidence of later experiments is approximately 5°F. too low.

A study of Figure 1 as well as Figure 2, indicates that the original processing temperature does not affect the rate of discoloration in storage, except that the daily rate of

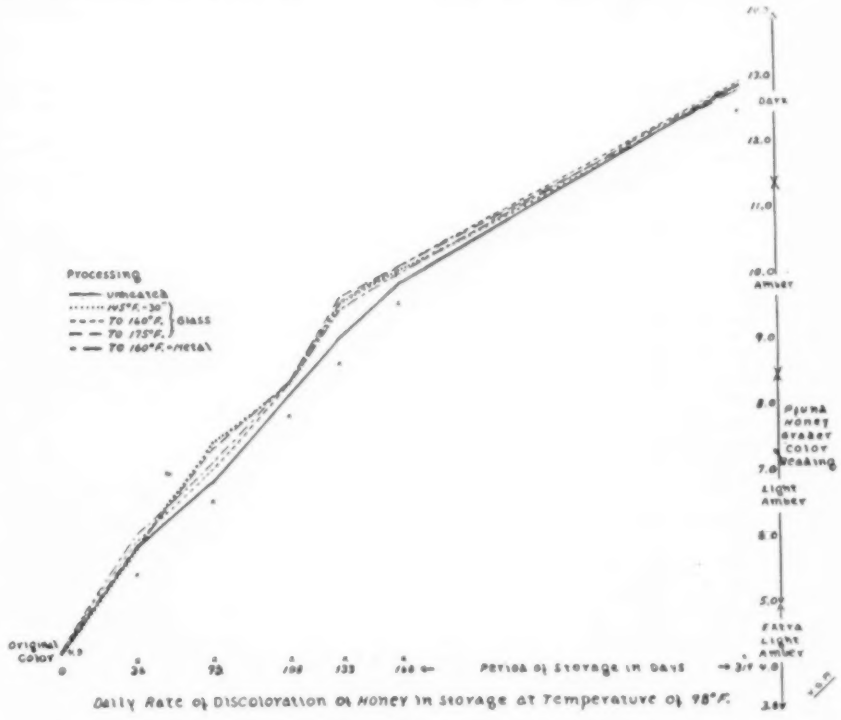


Figure 3—Rate of discoloration of a typical sample of honey, portions of which were processed at different temperatures and stored at 98°F. Color readings were made at the time intervals listed at the bottom of the chart, those of the first four periods by Becker (1) of samples prepared by him under the direction of the writer.

discoloration is apparently decreased at an earlier date with a honey already slightly discolored by the higher processing temperature.

Another series of experiments was started in 1936 using a common sample of water white honey (Color reading 2.36 by the Pfund Honey Grader) and a similar strainer of sugar sack toweling for all samples which were heated to temperatures of 145, 160 and 180°F., and held by groups for 0, 15 and 30 minutes before straining and cooling. These were then placed in half pound glass jars not entirely filled and placed at constant storage temperatures of 50, 55, 59, 60, 65, 70, 75, 77, 80, and 98°F.

It was again found that the amount of discoloration even by the heating to 180°F. for 30 minutes was rather insignificant although such samples (180°F.) did lose some of their delicate flavor and aroma. The amount of discoloration as a result of storage for 168 days at the various constant temperatures indicated are shown graphically in Figure 2. A study of this chart will reveal that there is little increase in the color values at the lower ranges of storage temperature but between 70°F. and 75°F. there is an increasing rate of discoloration. Although information is not available for the 5°F. intervals between 80° and 98°F. it seems to be quite evident from a study of both Charts I and II, that the rate of discoloration above 75°F. is quite closely related to the increase in storage temperature. However, since all the curves show a sharp upturn above 70°F., it is safe to recommend that honey that has been properly processed to destroy the yeasts which cause fermentation and melt the crystals which serve as nuclei for granulation (See discussions of granulation and fermentation in previous articles of this series) can be safely stored without serious deteriorating results of discoloration and loss of flavor at temperatures below 70°F.

If 70°F. is to be accepted as a maximum for the storage of properly processed extracted honey, there is some conflict with the practice of some commercial bottlers or packers of chunk honey who store at a temperature of 80°F. to prevent granulation. It is true that processed honeys stored at 75°F. will show some slight granulation if not heated sufficiently to melt all the crystals. On the other hand, most honeys if heated to 160°F. or slightly less for 30 minutes, then can be stored at any convenient and economical temperature below 70°F. over a long period of time without deteriorating losses provided the atmosphere of the storage room has a relatively low humidity.

The result of another set of experiments started in 1935 reveal that the amount of discoloration of honey in storage at high temperatures is more or less directly proportional to the length of the storage period, as shown in Figure 3. With this set of samples readings were taken at intervals for a period of 150 days and then again at the end of 320 days, approximately eleven months of storage. With the higher storage temperature of 98°F. where no granulation occurred, the rate of discoloration during the first 130 days as indicated by the more or less straight line curves was more or less proportional to the length of the storage period. The discoloration for the first 130 days amounted to approximately 0.4 of a point (0.4mm) on the Pfund Honey Grader for each day of storage. Between 130 and 320 days the rate of discoloration decreased somewhat being approximately 0.15 of a point (0.15mm) per day. In other words, the rate of discoloration per day during the first 130 days was approximately two and two thirds times as great as the average daily discoloration in the following 190 days. Stating this in another way it is apparent that approximately 63 per cent of the discoloration during a period of ten and a half months occurred during the first 130 days, further proof of the seriousness of the problem of honey storage even for a few short months before honey is marketed.

It is not uncommon for extracted honey to be exposed to relatively high temperatures for a period of two or three months during the summer period after extracting and before marketing. In our own work we have found that the amount of discoloration over a two year period was greater at room temperatures than an average temperature of 77°F., due to the high summer temperatures where no artificial cooling was used. It is, therefore, apparent that consideration of honey house heat is important.

Another experiment in which similar portions of various samples of honey were stored for a period of two years indicated that samples stored at room temperature in the light were lighter in color than those stored in the dark. (See Table 1). In this particular case, the samples were placed side by side on a shelf on the south side of a room with windows on the north side only, the uncovered samples thus not being exposed to sunlight. The covered samples were kept in an ordinary cardboard case protected from the light. Although all samples were somewhat darker due to the darkening effect of the relatively high average room temperature, those exposed to light were apparently bleached somewhat by the light. However, our observations on other samples over periods which include the variable temperatures of the two year period show that even with the bleaching effect of daytime light that the average room temperature pro-

(Please turn to page 416)

Table 1

Variations in discoloration of sweet clover honey (2.36) due to processing temperature and to storage at room temperature for a period of two years (less 10 days) in darkness and exposed to room light (no direct sunlight).

180°F. Processing Temperature	Raised to 180°F. in 1 hour and 40 minutes		Raised to and held at 180°F. for 15 minutes		Raised to and held at 180°F. for 30 minutes	
Type of Storage	Light	Dark	Light	Dark	Light	Dark
Color after Heating	2.69		2.88		3.10	
After 2 Years	4.87	5.86	5.23	5.79	4.83	6.02
Color Increase	2.18	3.17	2.35	2.91	1.73	2.92
Dark over Light		+0.91		+0.56		+1.19

145°F. Processing Temperature	Raised to 145°F. in 1 hour		Raised to and held at 145°F. for 15 minutes		Raised to and held at 145°F. for 30 minutes	
Type of Storage	Light	Dark	Light	Dark	Light	Dark
Color after Heating	2.46		2.64		2.69	
After 2 Years	4.50	5.74	4.20	5.61	4.23	5.38
Color Increase	2.04	3.28	1.56	2.97	1.54	2.69
Dark over Light		+1.24		+1.41		+1.15

Original color readings by Pfund. Honey Grade, equal	2.36	
Average color increase on 180°F. heatings, equal	0.53	grader points
Average color increase on 145°F. heatings, equal	0.24	grader points
Average color increase stored in darkness, equals	2.99	grader points
Average color increase stored in light	1.90	grader points
Average increase darkness over light, equals	1.09	

(Note that the color increase due to the processing temperature is relatively insignificant when compared to the discoloration occurring in storage.)

Moor Honey

By A. F. Abbott,

Mountain Grey Apiaries,

England.

St. Hilda's Abbey, Whitby, the crowning gem of the Yorkshire moors. These moors comprise hundreds of acres of heather, from which is produced a honey of unique quality. It commands a price at least double that obtained for honey from other flowers. (Photographs by the author.)

ONE of the most delicious and unusual sweets is the honey obtained from the heather. Heather, or ling **(Calluna vulgaris)**, is a dwarf shrub abounding on the moors and highlands of the British Isles. During the summer months its dark green foliage is unattractive; but if one crosses the moors of Yorkshire in August when the heather is in full bloom, one is rewarded by the glorious purple blaze of color, covering the rolling ground as far as the eye can see.

To the beekeeper, the rewards are to be found not only in the vista it affords but in the copious supplies of nectar yielded by this useful plant. Heather honey is appreciated by connoisseurs the world over. It is a honey of peculiar properties; for instance, its consistency is that of a stiff jelly and, on this account, it cannot be extracted from the comb by centrifugal force as are other honeys. Instead, the comb previously cut from the frames is wrapped in straining cloth and inserted in a specially built press, by means of which the viscous honey is squeezed out.

The honeyflow from the heather is a very useful addition to the main honeyflow from white clover, which usually ends in mid-July. Immediately the clover supers are off the hives and the clover honey extracted, the combs are returned to the bees for the heather harvest. The moors are some fifty miles away from our home apiary, and the packing of bees for transport presents no small difficulty to ensure their safe arrival in good condition. On the evening before the day fixed for moving, the hives are fitted with ventilating screens, in lieu of crown-boards, and the entrances are closed immediately the bees cease flying. The floor boards, body boxes, and supers must be made secure by special staples and care taken to see that every colony is so confined that not a single bee can escape, yet is provided with ample ventilation. Before sunrise the next morning, the hives are loaded onto large motor trucks and in a few hours are placed in their new stands amid the heather.

And what of the bees? They have a hard task before them; for the few weeks following may provide weather alternating between wet and dry, cold and hot, with invariably chilly nights. So you may be sure that a hardy bee is most essential. It has been proved over and over again that Italian bees—either the native Italian or American strains—are almost useless under such conditions. The dark brown or grey bees have been found to be more suitable,

View of some of the hives on the Yorkshire moors. These are deliberately put in circular formation to prevent drifting, which is very common on these open wind-swept moors.

especially Caucasians of good strain.

Contrary to the usual opinions held by beekeepers in the United States, it is interesting to note that there are several large commercial beekeepers in England. We are among those who produce tons of both clover and heather honey annually. Our own strain of Caucasian bees has been developed by an intensive system of selective breeding for many years. Thoughtful European beekeepers are now beginning to realize the immense advantages to be obtained by the use of a hardy industrious bee, like the Caucasian; for, because of variable weather conditions, the suitability of the bees may make all the difference between a good crop and no crop at all.

—ABJ—

Honey Judging in the British Isles

By Harold Teal,

England.

BEFORE dealing with the actual judging it would be well to review the way in which honey shows originated and the lines on which they have progressed. It was largely due to the philanthropic enthusiasm of T. W. Cowan that honey shows were started under the auspices of the British Beekeepers Association, and the main object in the first place was to enlighten and encourage by example, as to the best way of preparing and packing honey. Previous to this, honey was often packed in jam jars and the like, with just a tie on cover and perhaps not too cleanly packed at that. This the shows were designed to alter, and to that end it was laid down that all containers should be of the tall screw-cap type, and the honey be graded into color grades, viz:—Light, medium and dark. The color was judged by means of two pieces of colored glass. Both were of the same depth of color. All honey as light or lighter than one piece of glass came in the light class, and that darker than one piece but not so dark as the two pieces put together, in the medium class. Honey darker than two pieces put together would be in the dark class. It was judged for color by holding the glass up to the light by the side of the jar of honey to be judged. As at that time all honey jars were approximately the same diameter (in the 1 lb. size) this method answered very well. In more recent times however, this method of color grading has tended to retard the introduction and use of the squat jar. This is a pity as this type has a definite sales value and strongly appeals to the housewife. Owing however to its being considerably wider than the older tall pattern, the honey in it appears darker than it really is. For this reason exhibitors stick to the old pattern.

The shows certainly achieved their original purpose and today one sees very little honey offered for sale but what is well put up in recognized honey jars. Having done that however they serve little purpose to needs.

It must be remembered that beekeepers in Great Britain were until recently nearly all hobbyist beekeepers. According to the Ministry of Agriculture's Report on the Marketing of Honey and Beeswax in England and Wales, Economic Series No. 28, in 1929 there were only 35 beekeepers in England and Wales with more than 100 stocks and 110 with 50 or more at the same date. While it is certain that numbers have increased materially since then, by far the majority of beekeepers still have the hobbyist outlook and the shows reflect this. There is no attempt whatever to use the shows for propaganda purposes, and except when held in conjunction with some other function they are rarely visited by any but interested beekeepers. This is equally true of the small local shows as of the National Show which is held yearly at the Crystal Palace. (Recently burned down).

In England we have no Honey Judge Certificate but they have in Scotland. In England and Wales judges are chosen for their experience. They generally start by assisting some tried and recognized judge at a larger show and eventually are asked to judge on their own at a local show. If their awards are satisfactory and generally agreeable to members they are asked to officiate at more and larger shows. So they gain experience and prestige. All the work is on a voluntary basis but expenses are generally paid. Some County Associations or larger Federations keep a panel of such judges which is available to the local branches when choosing a judge.

As to the integrity of the judge and the justice of his point of view there is seldom any question. All the exhibits are carefully staged and numbered. Awards do however

		M. of Ag.	Revised M of A.	Preferred
A.—CLEAR HONEY				
1.	Suitability and uniformity of container	10	5	15
2.	Uniformity and neatness of labelling	10	5	15
3.	Uniform and accurate weight of honey	15	7	15
4.	Condition, including absence of granulation and impurities	10	8	20
5.	Cleanliness	10	15	20
6.	Color and brightness	5	11	15
7.	Quality of flavor and aroma	20	25	25
8.	Density	20	24	25
B.	GRANULATED HONEY			
1.	Suitability and uniformity of container	10	5	15
2.	Uniformity and neatness of labelling	10	5	15
3.	Uniform and accurate weight of honey	15	7	15
4.	Condition and freedom from frosting	10	8	20
5.	Cleanliness	10	15	20
6.	Color	5	11	15
7.	Quality of flavor	20	25	25
8.	Quality of granulation	20	24	25
C.	SECTIONS OF HONEY			
1.	Suitability and uniformity of wrapping	10	5	30
2.	Uniformity and neatnesss of labelling	10	5	30
3.	Uniformity and completeness of filling	20	25	30
4.	Cleanliness of frames	10		
5.	Cleanliness of cappings	10	20	20
6.	Condition of honey, freedom from honeydew, weeping and granulation	20	25	25
7.	Evenness and color uniformity of capping	20	20	25

Second column represents the Committee's revision of the scoring if eight sub-divisions are required.

Third column represents the Committee's unanimous opinion of how honey should be judged.

vary according to the personal opinion of the judge. This is inevitable under a purely personal method of judging which is briefly as follows: First a general look over the class to see if any can be put out on account of wrong color. Any doubtful exhibit is taken to the light and checked with a grading glass. Next they are examined to see if any can be eliminated for uncleanliness of pack or honey. Lids are then removed and the honey tested for density. This is done by moving the surface with a glass rod or small spatula. With practice the density can be quickly and accurately tested by this method. A density meter can be used but is much too slow when judging large classes. Generally a number can be quickly eliminated and then the others are more carefully examined, for brightness, flavor and aroma. The two latter points must of course vary to some extent with each judge but the above methods, which are invariably used, result in the same exhibits winning at so many shows, under different judges, that it would seem to show that there is not much wrong with the system.

An attempt to get greater standardization has however lately been made by the introduction of the score card method of judging. In this a specified number of points is allowed for each quality of the honey to be judged. The exhibit having the highest number of points is first, the next second and so on. Here again there is a difference of opinion between the older hobbyist beekeeper and the later more commercially minded beekeepers, as to what shall be judged. The older idea is to judge and allocate points only to the honey and its qualities. The other side say that the pack and "tout ensemble" is just as important and should also be taken into account. This latter view is reflected in the scale of points used at the Imperial Fruit Show in 1933 under the auspices of the Minister of Agriculture. The Committee of the Three Counties (Wilts, Hants and Dorset) Council later revised these for their own use. They had previously used the score card system with satisfactory results. It was greatly appreciated by members as they could see exactly HOW the winning awards were made, or in what respects their particular exhibits had failed (generally a more burning question.) From the judge's point of view however, it had one great disadvantage and that was the time taken. The number of subdivisions of the Imperial Fruit Show score card was felt to be too many from this point of view so it was decided to adopt the last line as a more practical method.

On the whole, although mistakes are sometimes made there is little dissatisfaction with either judges or awards. Provision is made in most schedules for objections to be made, but these must be made before a certain time on the day of the judging, and be accompanied by the lodgment of a certain sum of money, which is forfeited if the objection is not upheld. This latter provision goes a long way to prevent open and unwarranted criticism.

—ABJ—

Businesslike Beekeeping

By Gordon P. Dillon,

Ohio.

THERE is no group of agricultural producers with more native ingenuity than beekeepers. They have, in this country and in Canada, developed commercial production of honey to an extent not even approached in other countries. The volume of honey produced is startling to those not familiar with bee culture or honey marketing. However, this volume is not enough to command much engineering skill in developing equipment. Other agricultural industries such as sugar production, dairy products, and flour milling, have had the benefits of many trained engineers. Considering this handicap, no industry has shown more results in efficiency of production, for the trained skill available to it, than the honey industry.

It is said that the beekeepers as a whole have not shown the same ingenuity in developing a knowledge of good business practice. The average producer of honey is handicapped in profitably marketing his crop unless he has a proper understanding of business methods. The author is both a honey producer and a honey buyer. These suggestions are the result of sad experience, both as a producer selling to others and as a packer buying from honey producers.

How shall I sell my Honey?

Many producers prefer to sell their crops in large lots. To some no other outlet is open. At the same time there has always been a large group of producers who pack honey in retail packages and sell it direct either to wholesale grocers, to retailers, or retail it themselves at roadside stand, or house-to-house, etc. The most common business error for this group is to forget to figure their extra selling cost when disposing of honey in this way. Far too often we find a producer who is willing to stand this extra expense and sell his honey at about the same price per pound that he could have secured if sold in one large lot at one time. In addition to the extra cost of packaging, we must consider the extra cost of selling. Wholesale grocers find that, out of every dollar collected from the retailers, they spend about 15 cents to do business and the other 85 cents is passed on to the honey packer. If you are performing the services which a wholesale grocer performs for the retail grocer, then it will cost you about 15 cents of each dollar to sell it; so if you are not collecting this cost, you're cheating yourself. The cost of selling is even higher where the service is that of a wagon distributor instead of the usual wholesale grocer. About 20 cents to 25 cents of each dollar collected from the consumer of honey, goes to the retailer; and if you are performing the service of a retailer, by maintaining a roadside stand, or selling house-to-house, you're cheating yourself if you are not collecting this extra amount, **because it cost you that to do business.**

To Whom Shall I Sell My Honey?

Distrust of honey buyers by beekeepers has too often been justified. The beekeeper is offered an attractive price by a fast talking purchaser who loads up the honey in his truck, and then says, "Now I've got this

honey sold, but it will be a few days before I can get my money back so I can pay you. I'll send you a check just as soon as I get paid for the honey." That's the last chance the producer ever had to be certain of being paid for that load of honey.

The most important department in most every big business is the department that decides who, of the customers, can have credit and, if so, how much for how long. Too many beekeepers neglect this end of their business. The beekeeper should be his own credit department, analyzing every one of his customers, and passing critical judgment upon their worthiness to receive credit. For most beekeepers the local banker is a good source of information regarding credit ratings. Almost every banker has the latest edition of the Dun & Bradstreet rating book. Every firm of any size, throughout the country, has a rating in this book. Your banker will explain how these ratings tell whether or not your honey customer pays his bills promptly.

However, many honey buyers are so small or are doing business as individuals and have no rating. Then one must fall back upon other sources of information. Each local association of beekeepers should be a clearing house for credit information. All too often, beekeepers don't want to tell each other about customers for fear they will lose the customer to some other beekeeper. We are all human, and we dislike to tell others when we've been made to look like a sucker. Don't be afraid to check up with other honey producers if a honey buyer wants to buy from you on credit.

Not all of the documents and papers described in this article are involved in each and every sale of honey, but the brief descriptions given we hope will be helpful in promoting better business relations between buyers and sellers. A knowledge of these forms, and how they are handled, will quite possibly save you from loss in marketing honey. The information given, will doubtless seem extremely elementary to some, but the author remembers how hard it was to get just such information when he first started to ship honey, and even today it is surprising how many transactions are made where either one or both parties don't have the information given here.

1. **The Purchase Order.** This is an order from the buyer to the seller. It should show the quantity and description of the honey being sold. It should give shipping instructions. It should, by all means, show the price and the terms of payment.

Many firms will not accept goods unless they have first issued a purchase order. Better be sure before you ship honey a long way off that you have a purchase order authorizing you to ship. Then be sure that you are complying with the instructions thereon. Don't ship first and then take up the changes with the buyer.

Immediately on receiving a purchase order you should advise the buyer whether or not you will accept it. Tell the buyer whether or not you are going to complete the sale.

When you make a shipment by common carrier, that is by rail or motor truck or steamship company, there are two papers that you should send to the buyer the same day that shipment is made. The original bill of lading and your invoice.

2. **The bill of lading** is made out either by you or the freight agent, in triplicate. The original is sent to the company to whom you are selling the honey. The second copy is kept by the transportation company. The third copy is kept by you. In order to be binding the bill of lading has to be signed by you, or your agent, as shipper and by the transportation company's agent. It must show the quantity and description of the goods shipped as well as the gross weight. It is a receipt given by the transportation company to you for the goods and also a contract with the transportation company to carry the goods to the destination.

The freight charges are either "prepaid" or "collect." If prepaid, you pay them, and mark bill of lading accordingly. If collect, the transportation company collects from the company to whom the goods is shipped.

If you want to ship honey and have buyer pay for it before he can get the honey from the transportation company, have an "order bill of lading" made out instead of the usual straight bill of lading and attach this order bill of lading to a draft and send to the buyer's bank for collection. Your bank can give you more complete information on this subject.

3. **The Invoice.** More beekeepers slip upon sending invoices for their honey than on any other point. An invoice is a bill sent by you as a seller, to the buyer. It shows that the goods have been shipped, giving the date of shipment, and the name of the carrier. It describes the goods, showing quantity, quality, price, total amount of sale, and terms of payment.

Many firms, having several or more offices, specify on their purchase orders, that duplicate or even three copies of the invoice must be sent to them—one for the branch office, and one or more for their main office. Watch your purchase orders for instructions and follow them carefully.

4. **Drafts.** The buyer's bank will collect the amount of the draft from the buyer before giving the buyer the order bill of lading. This forces the buyer to pay for the honey before getting it, because he can't get the goods from transportation company without first giving up the order bill of lading and he can't get the bill of lading without paying the bank for the honey. The bank will return the money to your bank, as shown on the draft.

There are two kinds of drafts—the usual one is called a "sight draft." Theoretically the buyer's bank is supposed to show it to the buyer as soon as it is received, which may be some time before the goods reaches the destination. This, in effect, forces the buyer to pay for the honey before it reaches him. Usually, however, the bank holds it until the honey arrives.

To be perfectly correct you should send the buyer's bank a second type of draft when you want the buyer to have the privilege of waiting until the honey actually arrives before paying for it. This type is called an "arrival draft" and is to be held by the bank until the honey actually reaches destination.

Many buyers specify that the honey may be shipped under a draft with bill of lading attached; but in order to protect themselves against mistakes, they specify on the purchase order that the order bill of lading must bear the wording, "Allow Inspection." This means that the buyer is privileged by the transportation company to inspect the shipment after it arrives and before he pays the draft at the bank. Thus, if the honey is not right, he can refuse to pay the draft and refuse the shipment. **No reputable firm ever does this unless there is grave reason for so doing.** If a reputable firm does this in any case, you may be sure either that the shipper has not shipped what was ordered or that there is some misunderstanding that should have been avoided by clear wording of the letters that were exchanged before the deal was made, or because the seller failed to follow the instructions as shown on the purchase order.

Samples

Most honey is sold on the basis of samples. In most commodities, like wheat, corn, oats, wool, tobacco, peanuts, etc. the government has men who are authorized to sample shipments and their sampling and grading is final and binding. Some states have made provision for the proper sampling and grading of honey by trained men using the official Department of Agriculture grades and instructions for obtaining fair samples that will properly represent the lot of honey being sold. This is not as

common as might be wished, although the practice is growing. Most lots of honey are sold by sample from seller to buyer.

The word "sample" presupposes that it is representative of the lot it was taken from. Unfortunately, this is not always the case. Don't salve your conscience by taking a light sample of a lot when you know that some of the later extracting that went into the same tanks was somewhat darker. Likewise, if your honey varies, send enough samples to show the buyer just what you have. He isn't trying to gyp you and you can't be successful trying to fool him. If he knows his business, you can't fool him on that shipment; and if he doesn't know his business, he's pretty likely to learn it from your shipment, if you try to put anything over. You aren't selling honey just this season anyway. You'll have honey to sell next year too, and you can't afford to risk your good name with the buyer. Frequently, it is a good policy to send the buyer two samples representing the lightest and the darkest, or the thinnest and that with the heaviest body. Watch flavors too. The buyer is buying a natural sweet; he realizes that honey varies; but his ideas and your ideas as to what is light and what is dark, or what is thin, or what is good flavored or poor flavored may be wide apart. Your success depends upon satisfying the buyer. Work with him by giving him true samples, and then write him a letter or give him any additional information that will help him know just what you have to sell. Small two-ounce samples are usually large enough.

—ABJ—

The Mystery of the Two Queens

By Canning Williams,

England.

IN the middle of March of this year, as we stood in the apiary enjoying the sunshine, I said to my wife, pointing to No. 3, "That is the strongest lot of bees I've ever had so early in the year. I must breed queens from it." They were working in such great numbers and with such extraordinary energy that they reminded me of a big swarm during a honeyflow.

It was not till the 12th of April—a sunny, warm day—that I ventured to make an examination. I have had so many queens "balled" through too early interference that I have become cautious.

There were fifteen standard combs in the hive, ten in the lower chamber and five in the upper. Having inspected the five combs, which were most generously filled with eggs and brood, I removed the chamber, and had examined one or two of the bottom combs, when—I could scarcely believe my eyes!—the queen alighted upon my hand. I gave expression to language too emphatic to quote for I knew that she would not have taken wing if she had not been attacked. I left the combs uncovered for a few minutes and then succeeded in finding her on one of them. She was being hotly chased and presently was caught. I rescued her, put her in a tubular cage, plugged at one end with a cork and at the other with candy, and placed it under the quilts. On many similar occasions I had proved that, by the time the candy had been eaten and the queen liberated, the bees would have calmed down. My great disappointment, therefore, can be imagined when, on the morning of the 14th, I found the queen dead upon the ground.

Fortunately, I had a small lot which I intended to unite with a 6-comb colony, so I took away their queen and introduced her to No. 3 by means of a travelling cage provided with candy and with a dozen young bees from that hive. In order to delay her liberation, I kept the candy-hole covered for 24 hours. On the afternoon of the 17th I again had to relieve my feelings with unprintable language, for there on the grass, her wings indicating a severe mauling, was the body of the second queen. Oh, well! This is the kind of thing one has to put up with in beekeeping.

What could be the explanation? Had they started to rear queens? . . . Then I had a brilliant thought: **Is it possible that there were two queens?** Five minutes later my mind was at rest: there **had** been two queens—two fertile queens, and this accounted for the extraordinary strength of the colony.

I know it is not at all uncommon in cases of supersedure for two queens to exist happily for a time in the same hive. In my "Story of the Hive" I mention an instance, which came under my own notice, of mother and daughter living in harmony for ten months. But the present case was not one of supersedure, as both queens were young. Here is the history of the colony:

1938—

June 5—Made nucleus with virgin and bees from No. 2.

June 20—A few eggs.

July 10—Several scores of young bees.

July 20—Began stimulative feeding.

September 5—Very strong. Made up for winter. 15 combs.

I can offer no explanation to account for the presence of the two queens (I wonder if a "hunger" swarm had entered the hive unknown to me?) and, as the experience is one I have never had before during the long time I have kept bees, I thought a description of it might be of interest to my brother apiarists.

—ABJ—

Honey for Hikers

In National Geographic magazine for July (page 97) Wendell and Lucy Chapman comment as follows in their article, "Lords of the Rockies": "We do not use any stimulant except weak tea with a tablespoon of honey per cup. After a 20- to 30-mile hike, a pint of this 'pick-me-up' revives us completely in 15 to 20 minutes with no letdown afterward."

National Geographic reaches approximately one million subscribers, and probably two or three times that number of persons read the magazine. Honey should get a boost from that mention.

Harry Harberg,
Minnesota.

Liquefying Honey In Glass

By J. V. Stuyvesant,

California.

FROM time to time there appear in the bee journal descriptions of various methods of melting granulated honey for the retail trade, some of which seem to be theoretical or fanciful rather than practical, while others require considerable rather expensive equipment which many of the smaller operators cannot well afford.

Therefore having prepared and retailed honey on a small scale for quite a number of years, I wish to suggest a simple method that has and does serve me very well.

One of the big annoyances to venders of honey at retail is its tendency to granulate after it has been bottled or canned in small packages and labeled.

To melt honey that has granulated in the 5-gallon cans is a simple matter, as the can may be placed over any sort of stove or gas plate in a wash-boiler of hot water with a wooden slat rack under the can to keep it from contact with the bottom of the boiler or tank, and if the water is not allowed to get hotter than 180 degrees it will melt very nicely and without damage in due time, depending somewhat on the class or kind of honey and the hardness of the crystals. Some honey granulates much more thoroughly and makes harder crystals than other honey does and will require more time to dissolve.

To prevent the hot honey from running over and out of the can when the stopper is removed, I usually remove some of the granulated honey before heating it. This may be done with a large spoon if the can opening is large enough to admit it, or, if not, a piece of brass or galvanized tube about a foot long with a piece cut out of one side for half of its length and just large enough to enter the opening may be pushed into the granulated mass of honey and by giving the tube a turn or two it may be withdrawn full of honey like a scoop. Of course, the cut out end is to be pushed into the can just as grain buyers push a tube into a sack of grain to sample the contents. The water may be cooled, if it becomes too hot, by removing some of the hot water and adding cold water if the heat cannot be regulated on the stove.

When honey that has granulated in labeled tins or glass has to be liquefied the hot water bath is not practical, as it would be certain to loosen and spoil the labels and sometimes it watermarks the glass if it does not break it. This is where the oven or hot air chamber comes in just right. The oven of any gas or oil stove on which the heat can be regulated is fine, as all that is necessary is to place a sheet of tin a little smaller than the bottom of the oven on some sort of support about an inch above the bottom of the oven to deflect and scatter the heat as it comes up from the stove or burner below, then place a wooden rack above the metal and stand the containers on the rack with a little space between them. The rack should be made by nailing thin, narrow slats across ¾ inch or one inch narrow cleats, leaving about ¼ inch cracks between them. An oven thermometer should be used and the heat kept around 160 to 180 degrees. The oven may be cooled to proper temperature by partly opening the door if the stove heat cannot be turned sufficiently low. The foregoing is based upon the assumption that the source of heat supply is beneath the oven. If however, the heat should be supplied from the top or sides, the tin shield mentioned as placed on the bottom should be so placed as to shield the honey from a direct draft of the heat to prevent scorching the honey. In any event, the containers should be placed upon wood and not upon metal, as the hot metal might crack the glass or scorch the honey.

By this simple method labeled jars or cans of honey may easily be heated and liquefied without damaging labels, glass or honey if reasonable care is taken to avoid overheating.

The same thing may be accomplished with even less trouble if a heat chamber or insulated box that is heated by an electric coil or core is used, provided that a circuit breaker operated by a thermostat and thermometer are used, similar to those used in the electric brooders for baby chicks. Heating such a box by means of electric lamps though (as has been recommended by some) has not proved satisfactory to me, and is a wasteful and expensive source of heat.

Most any "handy man" can easily rig up such an outfit and it certainly is the easiest way to handle the honey, as it would be self-regulating as far as temperature is concerned after the circuit breaker and thermostat are properly set but the cost of current would generally be somewhat greater than that for gas or stove fuel.

—ABJ—

Washington "Honey Bill"

For a number of years Washington state beekeepers have been unable to secure an appropriation for bee inspection. During this last session of our state legislature we succeeded in getting passed the "Honey Bill' which became a law June 7. It requires a state honey seal upon every pound of honey offered for retail trade. The purpose of this law is to secure sufficient funds to provide adequate inspection for bees and for the grading and sale of honey.

The state apiculture division is under the Department of Agriculture, of which R. E. White is supervisor. While he is not a beekeeper and is quite unacquainted with the details of beekeeping, Mr. White saw our great need; and it was he who suggested we try this sort of thing. Under the guidance of his department and a group of beemen selected from various parts of the state, this law was put into shape; then with the cooperation of the beekeepers and some hard work from the officers of our state organization, we put the thing across. All honey produced in the state and any shipped in must bear this tax.

June 12 Mr. White put four inspectors to work. The plan has been in operation such a short time we have no way of knowing how much revenue will be available, but we hope to secure enough funds to provide a definite program for inspection work in the state.

Eva Wixom, Secretary,
Washington State Beekeepers' Association.

The Cucumber And the Bee

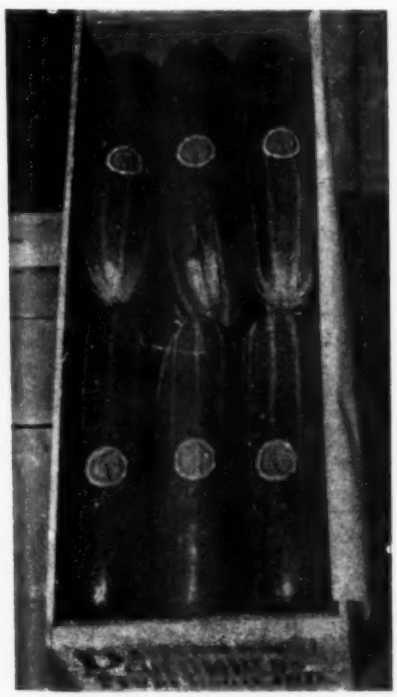
By Carl E. Killion,

Illinois.

View from the air of the J. W. Davis Company, Terre Haute.

IT is astonishing to discover that the greenhouse business dates back to Julius Caesar's time. The greenhouses of that day consisted of glass moulded into the form of bell jars which were placed in the field over the plants. In this way, heat from the sun's rays would greatly increase growth and would keep the plants from being chilled at night. The bell jar greenhouse has been developed until now a single greenhouse may cover several acres.

The J. W. Davis Company is the world's largest producer of hothouse fruits and vegetables. This great establishment, known as the "World's Largest Greenhouse," is to be found at Terre Haute, Indiana, in the south part of the city, just one block east of U. S. highway No. 41.



The Davis Gardens' fancy pack, containing twelve cucumbers, ready for shipment.

A further evidence of the honeybee as a pollinator is shown on this month's cover. The growing of hothouse cucumbers is an enterprise which demands and receives the services of our little honey-gatherer in producing the crop. In the establishment told of in the accompaning article, and in other greenhouses, beehives introduced at the proper time produce large results. For example, the J. W. Davis Company, of Davenport, Iowa, makes use of seventy-five colonies in the cucumber houses. The hives are suspended by wires, and one hive is used for each six thousand square feet. The growing season is December 15 to August 1, and colonies are replaced several times during this period.

The Davis Gardens cover seventy-five acres; thirty-four of these are under glass; and there are thirty-eight glass houses in all. The first ones built were eighty feet wide and six hundred feet long; the newest ones are forty feet wide and seven hundred feet long. A boiler plant capable of producing six thousand boiler horse power is required to heat these houses during the winter months. Each winter approximately 20,000 tons of coal are used.

The prinicipal crop produced at the Terre Haute plant is cucumbers. The culture of fruits, vegetables, and flowers under glass enables the producer to study the various growth reactions to heat, light, soil fertility, and moisture better than he could if the growing were done out-of-doors. At the Davis Gardens the soil is tested daily for moisture, and each week a laboratory test is run on soil, vines, and fruits, to see that the proper food elements are available in the soil and present in the vines and fruits. It was discovered that the cucumber is a semi-aquatic and requires many times the amount of moisture that nature normally provides and that to produce the highest flavored, best textured fruits, it was absolutely essential that proper moisture and food conditions be made available to the growing plants at all times. The outside grower is quite dependent upon nature for moisture; and when moisture is not available, the fruits stagnate on the vines and cannot have the delightful flavor of a properly grown hothouse cucumber.

Many old theories have been found untrue, by science, the chief of which perhaps, is the old "light of the moon" theory. The under-glass grower can furnish heat, moisture, and fertility in proper amounts; but all of these are worthless without proper light. Sunlight is one hundred per cent essential, unless artificial light should be used; and so far the cost of artificial light in commercial projects of this sort has been prohibitive.

Years of careful experiment with various types of cucumbers and constant crossbreeding have developed the finest flavor and texture of flesh in the fruit. Then, to retain the firmness and to insure a fine product reaching the customer, the Davis Gardens put their cucumbers through a process of wax coating.

Experiments are made with water culture, plants just growing and producing fruit without touching soil, receiving their nourishment from chemical solutions added to the water in which they root. But the enormous task of pollination, no matter how

the plants may be grown, has to be left to the honeybee. After man had built greenhouses, installed miles of steam pipe, planted seed, nursed the plants to maturity, pollination had to be left to the bee. Only those plants used to produce seed are hand pollinated: a very careful cross-pollination is made by hand from certain selected strains. Bees are excluded from the houses where these plants grow. Every beekeeper would be surprised to know how small is his compensation in honey and wax compared to the wealth added to the community in pollination by his bees. The importance of bees in pollination has long been underestimated.

Davis Gardens ship their hothouse cucumbers all over the United States, Canada, Alaska, and frequently to Manila, Shanghai, and Hong Kong. Their cucumbers are also included on the menus of ships on both the Atlantic and Pacific oceans.

—ABJ—

Something That Can Be Done

By Howard Potter,

Michigan.

This article is not intended to be of the buck-passing or pot-calling-the-kettle-black variety. We can all agree that honey in the hives is the best, purest and cleanest of foods. If it goes to market in unclean condition, the fault is squarely with the beekeeper. Plenty of perfectly satisfactory honey is available, yet great harm is done because the baker becomes disgusted with one bad lot and future sales are lost.

There is a reason—not an excuse—for unstrained honey going to market. Without any application of heat, good honey can be strained through the finest mesh cheesecloth as it comes from the extractor, but the process requires considerable effort and some expense. Therefore easier but less effective methods are used by many beekeepers, not because they are careless or "sloppy," but because they expect the buyer to strain the honey when it is heated for bottling. When such honey goes to the baker instead of the bottler and is dumped into the mix without clarification, the visible bits of comb, bees' legs (and even bees!) ruin the baked goods. No baker can stand for that.

Recognizing that the situation is extremely serious, I do not believe that a uniform, nation-wide system of inspection can be inaugurated in time to save the baking trade market. Certainly there is no indication that it will be done within the next two or three years. The honey jobber is in the best position to give us effective help now. We have heard many times that the honey buyer is essential to the distribution of our product and hence to our business, and it is true. But as for the jobber who takes a cent or two a pound cut for simply standing between the producer and the baker or the packer, we could "get along without you very well." **Why does a jobber ever have honey shipped to a consumer without making sure that it will be satisfactory in every respect, including clarity.** And if honey sold haphazardly makes a dissatisfied customer, why blame the producer who probably expected the honey to go for a different purpose when he packed it? Articles published the past two or three years imply that a jobber may not only be unaware of the character of a shipment of honey he sends out, but he may be unable to tell what producer supplied it. The suggestion that all honey be marked with the name of the producer is impractical because the jobber will be afraid, and rightly so, that future transactions might go directly between the producer and consumer, but a system of numbers would make it easy to identify the producer of objectionable honey. If such a producer had his honey refused a few times he would soon see the light.

Clean beeswax has long sold at a premium over dirty wax. Why shouldn't clean honey be worth at least enough more to pay for the time spent washing strainers? Perfectly good standards for clarity are described in the rules for U. S.Standard Grades for extracted honey, but **I have never seen an inquiry from a buyer that mentioned these grades or referred in any way to specifications of clarity.** If a buyer wants highly clarified honey he should say so, even at the risk of having to pay for it. While the government grades are not now compulsory they are a basis for definition and I believe anyone who offered honey of any grade when selling by mail would be bound to supply honey up to that grade or risk action for using the mails to defraud.

The issue of old cans has also been raised. I am told that there is a law prohibiting shipment of food in interstate commerce in used containers. Who would object more to the enforcement of this law applied to honey, the beekeepers or the packers who have used cans to sell? One thing is certain, a beekeeper who pays 90 cents for a new case of cans has got to get ¾ cent a pound more for his honey than the price paid on "cans furnished" or "cans returned" basis.

In short, let's all get clarity conscious when buying or selling honey and give competition a chance to eliminate the unclean stuff from the baking trade.

—ABJ—

Well, Well!

There is a difference between the queen bee and the offspring she produces. Take the larvae from any part of the hive and put it in a queen cell and the result will be a queen bee. Put the larvae of the neuter bee and the larvae of the drone bee together in a queen cell and there will come forth a queen bee impregnated for life; she will be female outwardly, but male inwardly. In this the bee represents Deity. It is a type of the Logos, or Word. A spirit from heaven flows directly into the bee and governs it, unlike any other insect—"Flaming Sword," April, 1939. [A truly remarkable state of affairs.—Editor.]

The Indispensable Aster

By Edgar Abernethy,

North Carolina.

ON a certain October afternoon not so many years ago, I, a rank beginner at beekeeping, was engaged in a thrilling adventure: I was going through my first colony of bees. I handled the frames with extreme care, "with fear and trembling" would hardly be an overstatement, for, having yet to receive my first sting, I had an exaggerated idea of the pain to be expected from it.

As I gingerly examined the combs, my nostrils were assailed by a strong, somewhat sour, and rather unpleasant odor. I felt a pang of fear. Was this the dreaded foulbrood, of which I had read so much? Further examination convinced me—quite erroneously—that the odor emanated from the freshly-gathered pollen with which many cells were filled. That was my first acquaintance with the distinctive odor of aster nectar, an odor which I have since learned to enjoy, as have learned of its importance to the beekeeper.

First place among local honey plants is usually assigned to the tulip poplar, no doubt correctly, for it is our chief source of surplus. Beekeeping would hardly be worth while in this locality without it The aster has achieved no such recognition, yet I consider it almost as valuable as the poplar. I doubt that I should attempt to keep bees at all, should some blight remove the aster from our list of honey plants, and I am convinced that it is equally important to the host of others throughout this section who keep a few colonies of bees. This is not a commercial honey district, but the number of small-scale beekeepers is very large, and probably this area—I refer to the Piedmont plateau of North Carolina— is more heavily stocked than many more favored regions. Indeed, it is overstocked in many places, including my own range.

We have a heavy spring honeyflow from several sources, sometimes it is over by June 1, sometimes, if sourwood yields, it extends into July. From that time until October, even the strongest colonies are able to secure little more than a bare living. When Lespedeza first came into extensive use here, it was hoped that it would help to bridge the gap. Bees work it vigorously but very rarely is any surplus stored from it. It has been a disappointment to beekeepers.

In consequence of this long barren period, colonies are usually very light in stores as fall approaches. Without a dependable fall source, heavy and expensive feeding would be necessary nearly every year. Goldenrod of which we have several species, yields very indifferently.

Here is where the aster proves its worth. So far as I have been able to observe, it never fails for any reason, excepting if it should rain while it is blooming. Even frost has little, if any, effect upon it. No matter what the season has been prior to this time, no matter how much or how little moisture is in the soil, if the second and third weeks of October are fair and reasonably warm, those empty combs will be filled. It is surprising how much honey can be stored in the short October days. This past fall my bees averaged around thirty pounds per colony in little more than two weeks.

Several different species of aster are found here, and bees visit most, if not all, of them, but the only one plentiful enough to be important is the common white field aster, a coarse perennial weed, ranging from three to five feet in height. It grows year after year in waste places and untilled fields, whole fields, acres in extent, are often one solid sheet of

white bloom. The blooming period covers most of October, but the honeyflow lasts no longer than three weeks, often less.

It's a very simple matter to check up on the progress one's bees are making while working asters. All that is needed is average olfactory equipment. On a still evening the rank, sour odor may be detected a hundred yards or more from the apiary. It doesn't seem possible that edible honey can be produced from this strong-smelling stuff, but when well-ripened, the unpleasant odor disappears entirely, and the light amber honey is of excellent quality.

I have never been able to secure a surplus from this source, I always leave it all with the bees for winter stores. Oh, yes, I know the books say that bees do not winter well on aster honey. Perhaps my bees have not read the books, in any case, I have never had any trouble from this source. Indeed, in my somewhat limited experience I have yet to lose my first colony in winter from any cause. Aster honey for wintering has given me such uniformly favorable results that I have come to regard a good aster flow as an almost certain indication of a good yield the following year.

Let me give an example: October of 1935 was very dry. Practically no rain fell while asters were blooming, and my bees packed their hives with aster honey. The following winter broke all records for severity. Conditions approximated those of the average northern winter, and bees were confined to the hive for long periods of time. All however, wintered in fine shape. The ensuing spring was the wettest I have ever known. Very little early honey was gathered, and of necessity aster honey was mainly used during the building-up period. Colonies were at top strength for the beginning of the May honeyflow, and (aided, I must admit, by exceptionally favorable weather) produced 75 pounds of cut comb honey per colony, nearly twice the usual average.

It must be understood that I can speak only from my own experience in this particular locality. We usually have a great deal of warm weather after the aster bloom is over, permitting the honey to be thoroughly ripened. Quite possibly, in regions where cold weather does not allow this, the half-ripened honey is not satisfactory for winter stores. That is not the fault of the aster, though, no doubt the same thing would be true of honey from other sources.

Perhaps the aster is not so important in other localities, but it certainly is important, even indispensable, to me. If its snowy blossoms should disappear from my range, that event would quite likely mark the close of my experience as a beekeeper.

—ABJ—

Late Transferring

By E. M. Cole,

Iowa.

IN an article on transferring to large hives, April 1939, I remarked that: "For those not wishing to transfer until late May or early June, there is a better method." So here it is, and although a little late, I think it will pay you to cut it out and "paste it in your hat."

In transferring in late spring the best method I have ever tried is to remove the colony to one side and put the empty hive in its place. Find the queen and put her in the large hive, then shake bees from a couple of frames of brood from which bees are hatching ("emerging" to you). This will give you a supply of young bees in the large hive to start brood rearing quickly. Put on inner cover and cover.

Now place the colony to be transferred on top on their own bottom board, and cover up. The upper colony will lose its fielding force, but if you do not overdo the shaking, you will have enough bees to care for the brood. The lower colony will gain this fielding force and will gain another force extremely vital, especially if you transfer to foundation, and that is a force of wax workers.

To make this clear I will make a rather long digression. I have a small extracting house at the edge of the bee yard and am not as particular as I ought to be in getting all bees off the combs when bringing in honey to be extracted. I also found that occasionally all bees could not be persuaded to leave the super through the bee escape. Later I found that bees that linger above the escape, even if left on the hive for several days, were bees that had just lately emerged. These young bees not only remain on the comb where they emerged, but on the same side of the comb. I don't know how long they would stay there, possibly a week, but I know that in the late fall they will starve or freeze rather than join the cluster just below them.

I had trouble getting these young bees out of the extracting house. I had read of many schemes and thought of more to get these bees back into hives. A small colony just outside the window gets a few, and I think only some older bees; a comb of young brood placed near where they bunch up in the honey house gets a few more; also a laying queen in a cage near the clusters gets a very few. But these young bees, I found out later that they are young bees, do not respond to this attraction sometimes clustering within an inch or two of a caged queen and staying there.

A few years ago I came to the conclusion that raising brood above an excluder and later extracting honey from these combs resulted in a slightly darker product, so I began to avoid it as nearly as I could, and I very well remember a surprise it gave me. In the honey I carried in that day and extracted I knew I had the usual quantity of bees, so was prepared to brush all that had not left through the window escapes into a container and dump them in front of some nucleus. You will know what a pleasure it was to find at sundown practically not one bee in the extracting house. Yes, it was just that free of bees. It came to me that these were all bees old enough to have been out of the hive and had marked their home.

Another thing came to me later, and that is a large per cent of these bees must have been wax workers for many of these supers were comb honey supers with their share of unfinished sections, and these wax work-

ers knew their way home. So when you put that colony to be transferred on top of the large hive on its own bottom board, the lower hive will get its share of what is just as vital to it as nurse bees, and that is a good force of comb builders.

In eight or ten days the bees in the lower hive should have a good start in brood, and you may then put the upper hive on the lower one with an excluder between, but it will pay you to continue for some time to shake a few young bees down in front of the lower hive.

It may occur to you that as the weather is warm and there is little danger of chilling, a better method would be to just shake all bees and the queen in front of the hive into which you are transferring them, and then place the brood on top over an excluder; bees will come up through the excluder to care for the brood and the queen is confined below. It sounds easy and may seem to be a good plan, but **don't do it.**

The trouble is the bees will do just what you thought they would, come up through the excluder to care for the brood and few bees (and if it turns a little cool it is hardly an exaggeration to say none) will stay below with the queen. Brood is emerging above, bees are cleaning and polishing the cells ready for the queen, the queen is below waiting for cells to be prepared for her, or foundation to be drawn out, and you will be lucky if you get anything started below in a week or ten days. Then, too, if it happens to turn unusually cool for a spell, you may get some rather disagreeable experience.

—ABJ—

A Teacher's Hobby

By Floyd O. Carter,

Minnesota.

I am a high school teacher who finds an interest in beekeeping rivaling the vocational interest in children's development and mental growth. I started out with very high ideas of what I expected those I taught to accomplish, but I have become very much disillusioned and find beekeeping a real diversion. I may never realize large financial returns, but at least it is something to do that is entirely different than teaching.

Beekeeping has been of interest to me since I was a kid in high school. Some twelve years or so ago the "Country Gentleman" ran articles on beekeeping, and about that time an obliging swarm settled on a ditch bank near our home so I had a chance to put some of the information into practice. However, an ill-advised venture of putting them into a new hive later on left me with a hive but no bees. I kept the hive and hoped to catch another swarm, but never did. The following years were busy ones for me, but a couple of years ago I happened to talk to a farmer who had bees and he said he would be glad to sell me a swarm, so I soon had a hive of bees. Last summer I bought a few more swarms and spent more time working with those few than a person should spend on thirty or more hives, but it was very interesting work.

Constant eye strain from close work has bothered me most of the time I have been teaching, but this year I have found the preparation of frames a great relief. I seem to be the type of individual who must be continually busy at worth-while tasks to be content and this work fits in well with reading. We might say it fits in well in my rotation of work.

Since starting beekeeping I have found a number of teachers and preachers and others who have worked with bees. Nothing pleases people more than to be able to talk about things other than "shop." There seems to be something about the subject that interests everyone and the more they know about it the more it seems to be a mystery. Of course my experience is very limited but I haven't found two who will agree on a lot of things including the causes of swarming and the reason bees soon "take to the timber" when swarming.

I have yet to find a person, young or old, who wasn't interested in learning about bees when the subject was brought up. I have seen the time when a chance remark started a series of questions that took two hours to answer and demonstrate.

It might be different if I were trying to sell the product but there seems to be a little magic about the words "bees" and "honey" to people who use little or none. Most of them give no valid reason for not using it except that they have the idea it is very expensive. In reality using corn syrup is more habit than anything else and is created by expensive advertisments of well organized interests. I have found but two people who said they didn't like honey and their reasons were rather vague. One said it was too sticky and the other said it smelled too much like bees. I have been told by beemen that a standard excuse is that corn syrup is too sweet and therefore honey would be entirely too sweet. For myself I haven't found anything more insipid on pancakes than the ordinary boughten syrup so I know that honey spoils the taste for the manufactured syrups.

In this state honey is relatively cheap. Its sweetening content is supposed to be about 75 per cent greater than that of corn syrup and its retail price has about the same ratio to the price of syrup. I have noticed that the decrease in the price of syrup has kept pace with that of honey. Maybe there is a reason.

If a solution to our economic problem is in giving the people a chance to be self-supporting, then an increase in the use of honey would give a large number of rural minded people a means of livelihood or at least a supplement to a meager income. At any rate it would keep the money in the community and make it do double duty.

One could go on and on giving reason for increasing the use of honey in the American diet but the main thing before the beekeeper now is in selling the idea to the public as the big concerns do their full page ads and popular radio programs.

Button Bush

It has seemed strange passing the button bush day after day for a long time not to see bees on it. It has bloomed constantly for a long period. In the balance of the scale hive in three years, the button bush is a failure as far as nectar production is concerned. I am looking forward to a year when I shall have a crop from it under the right conditions. It is becoming increasingly plentiful and forms an outer margin of growth at the edge of the huckleberry swamps. Some of these bushes stand in water and some where it is dry at the edge, but during the blooming time, the scale hive shows little gain.

Eleanor J. Neale,
Michigan.

—ABJ—

Footballer Beeman In Utah

Grid stars may be beeman out west! Tom Tod, husky star football center of the University of Utah, is getting in training for the season for the Redskins, at his apiaries. "It's a honey of a way to train," says Beeman Todd.

Glen Perrins.
Utah.

Partners for Honey

H. G. Bartlett, of Pennsylvania, sends us a clipping about the honey badger of South Africa, and Mayimba, the honey bird, who are partners. It goes on to tell how Don Selchow, a traveller in Northern Rhodesia, brought back the strange story of their seeking honey together.

"Selchow was trekking through the bush and his native porters called him to look at a hole in the ground. 'Kambole!' they cried, and invited him to smell. He did, and from it came a strong odor of fermenting honey. Then he learned for the first time all about Kambole and Mayimba.

"Kambole is a funny-looking creature with a black back and grey underneath, and short powerful legs armed with claws. He is a tremendous digger and can claw his way through anything. Iron bars will hardly make a cage for Kambole, although he is good natured in captivity. His chief delight is honey and its fermented liquor, but his short legs make him a slow mover and he is too lazy to go far in search of these delicacies.

Here is where Mayimba, the honey bird, is the ideal partner. Mayimba will flit miles over the bush seeking the honeycombs of wild bees, usually secreted in tree trunks, often with openings no bigger than the width of a finger. When he has found one he seeks Kambole and, with excited chattering arouses him. Mayimba is a brownish bird not much bigger than a sparrow. He persuades Kambole to follow him until the hoard of honey is reached. Then Kambole sets to work tearing through the bark of the tree, unmindful of stings, while Mayimba perches, chattering on the bough of a tree, in safety.

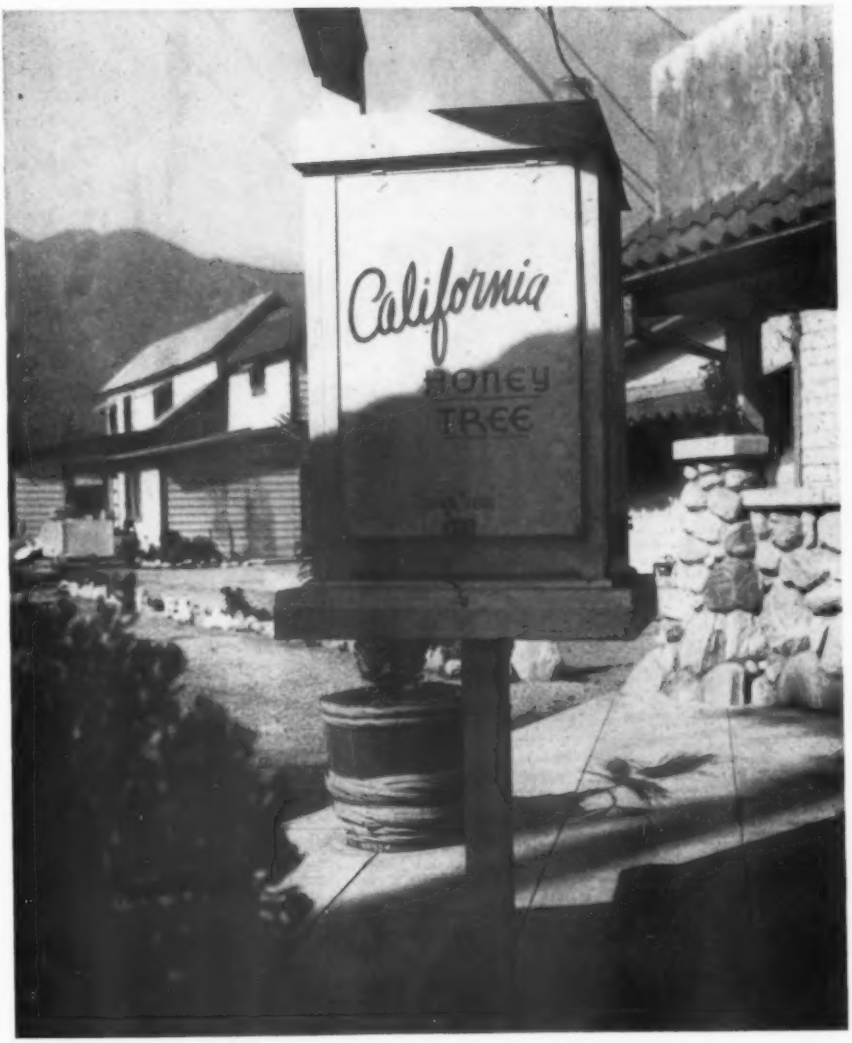
"At last the honey is laid bare, the honeycomb scattered and Mayimba takes his share at once. Kambole takes away some and hides it, because in the ground the rains get at it and ferment it to a brew that Kambole finds very pleasant."

—ABJ—

Manitoba Cooperative Honey Producers, Ltd.

In "Western Canada Beekeeper" for June, J. W. Braithwaite reports that the new Manitoba Cooperative Honey Producers, Ltd. is ready to go ahead in time to process and market approximately two million pounds of honey this season. W. Agar, vice-president and plant superintendent of the Ontario Honey Producers, Ltd., is undertaking the temporary management of the Manitoba body until a permanent executive head is selected.

Honeyville--The Place The Bees Built



You won't find Honeyville on any map of California, and certainly no person could have such a name, but put your return address on an envelope sometime, and send it simply to Honeyville, California, and see if you get it back because of insufficient address. Indeed you won't. It will be delivered promptly to the proper person.

Honeyville is a roadside stand, located on a main highway, selling farm products, filling short orders for food, pumping gasoline, and doing a dozen odd jobs for the traveler and tourist. There are thousands of them along California highways, mostly in varying stages of starvation.

This one is not just a successful enterprise; it is nationally famous. It is "that place where they have the bees." It is the house the bees built.

Some years ago, it was born just another roadside stand—but one thing distinguished it from the many others. It had a beehive right at the main entrance. No ordinary beehive; it was covered by metal plates, which could be lifted, permitting the customers to see bees at work beneath the glass.

Human beings always like to watch other members of their own species work; they like equally well to see members of another species. This is probably the reason for Honeyville's astonishing success. As soon as word of the "Honey Tree" passed, cars began stopping regularly along the highways to see the bees. It is said that not one person in a thousand who stops have ever seen the inside of a beehive before.

The main problem of roadside stands is to find some way to make high speed vehicles put on their brakes. Honeyville solved this problem by putting on a simple exhibition.

Marshall Perham,
California.

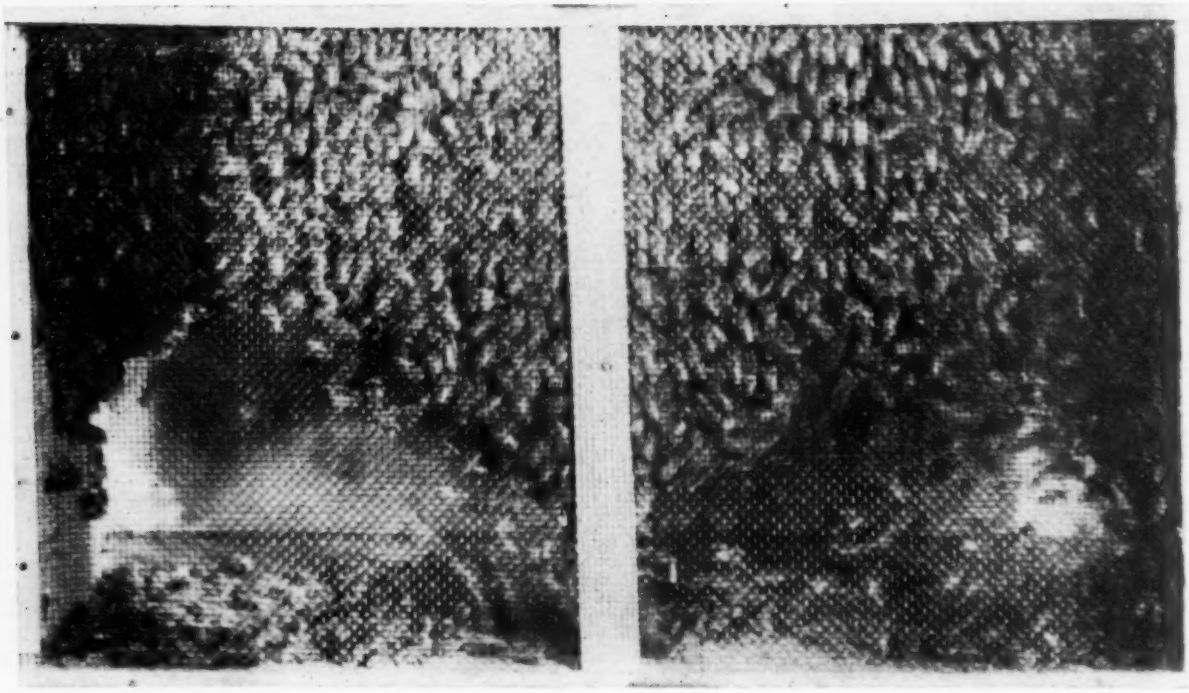
———ABJ———

New Jersey Bee Law

A bill requiring that honeybees be kept in movable frame hives to permit examination to detect presence of disease was passed June 21 by the New Jersey Senate at Trenton. The measure previously had been approved by the Assembly, where it was introduced by Assemblyman W. L. Vance, of Hunterdon County.

Bethune Jones,
New Jersey.

A WINTER PACKAGE



THIS is a picture of a two pound package of bees received December 23 and donated by an apiary in Mississippi to demonstrate the shipment and installation of package bees for a class in beekeeping at the Minnesota School for the Deaf.

When we thought of receiving a package of bees in December, we were skeptical about the way the bees would fare. Naturally there would be more old bees in the package shaken in December than in a spring shipment. Then, too, we were not sure that a single package shipped at the wrong time of year would receive the care in transit that spring packages usually get.

We were well pleased, therefore, when the package came through in good condition. The bees were clustered quietly and had half consumed the syrup in the feed can. On arrival they were fed in a warm room by painting sugar syrup on the screen.

They were then installed in a hive in a cool room so the bees would not fly and worry the inexperienced people in the class. The picture was taken after the feeding when the bees were clustering again in the cool room. They were not as compact as they were before feeding.

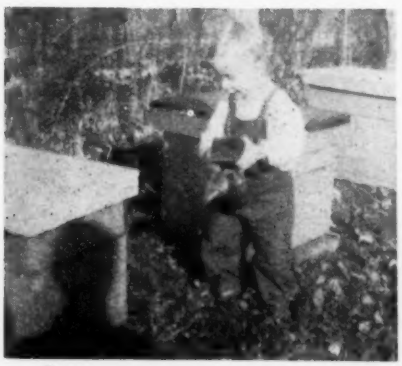
After demonstrating the usual method of installation, the bees were shaken into the hive by cutting open the screen, as recommended by Dr. Farrar, and combs containing honey and pollen were added.

It will be interesting to note how long these bees survive there as compared to the short life of package bees arriving and starting work at once in the spring. On this day, February 18, the package colony is clustered quietly and appears to be as strong in bees as the day it was put in, fifty-two days before.

Norris J. Ellingston,
Minnesota.

ABJ

DAVID AUGUSTUS STEPHENS



David Augustus Stephens loves bees and is fond of honey. Here he is with his junior smoker. Both Mrs. Stephens and I work together, producing comb and extracted honey, often moving our bees to good locations, with several outapiaries for sweet clover honey, using a homemade four-wheel trailer which is easier on the bees and more convenient than the former truck. We haul as many as fifty single story hives or twenty-five heavy colonies.

Wm. R. Stephens,
Indiana.

Institute News

The June issue of Phoenix Flame under "Top Tips for Top Men" gives this Top tip: **Honey Buyers:** American Honey Institute will list in the next issue of its publication, all members having honey to sell—as a guide to honey buyers. A chart will give seller's name, address, amount and kind of honey for sale and how it is packed.

— o —

Someone not long ago wrote to the health department of one of our largest daily newspapers and asked this question, "Will I be benefited by using a generous helping of honey each day?" The reply was "Yes, honey!"

— o —

The American Honey Institute is pleased to cooperate with the camp educational program of the Civilian Corps in Tennessee. This program includes a bee project.

— o —

The American Honey Institute believes that it is advisable to publish the next issue of Institute Inklings in late August or early September. At that time samples of new leaflets and window streamers can be included in the mailing.

— o —

Red letter dates for the beekeeping industry will be October 23-30 when the annual Honey Harvest Week will be celebrated.

— o —

Have you decided on your Fair exhibit? Did you read the article in the July issue of Beekeepers' Item entitled, "Are You Going to the Fair?" by Charles O. Dresden, of San Antonio?

May we suggest that you install a loud speaker in the bee and honey house of the Fair. Secure someone who has a good voice for broadcasting. Allow the exhibitors to give one or two-minute talks to advertise their honey or honey product. Prepare clever sayings on honey and bees.

For instance, how would something like this be: "Good morning, Fair Folks! Have you seen the unusual honey exhibit? Isn't it a honey? Why not take home a pail of this delicious honey to the folks who bee not here?

"Have you tried the delicious honey candy? If you are getting tired and need a little more pep to carry you through the day, eat some honey candy.

"Do you keep a Happy, Healthful Home with Honey?

H—stand for health
O—opulence
N—nutrition
E—energy
Y—youth

(On Childrens' Day) Good morning, Boys and Girls—How are you this lovely morning? Did you start the day right by eating honey? Why not stop at the information booth and get recipes for delicious sandwich fillings? You can make these delicious sandwich spreads yourselves. Keep two or three kinds on hand. Johnny is sure smart. Do you know why he gets such good grades? Listen. I'll tell you the secret. He eats honey. (Tell here about the peanut butter and honey, apricots and honey, and other spreads.)

"Instead of cookies and cake every day, make a filling for graham crackers by mixing powdered sugar with enough honey to make a spread of the desired consistency. Spread this between graham crackers and all around the crackers if you desire. My, but it is good!

"Don't hurry home from the Fair. Take home a pail of honey. Serve it on griddle cakes or French toast and surprise your family with a delicious, nutritious meal prepared in a short time. Few dishes to wash."

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Will you please remember the American Honey Institute when you broadcast. Ask those listening to write to American Honey Institute for additional recipes. They may be had for the asking.

— o —

The editor of a national magazine accompanied a physician from Denmark to the New York World's Fair. The physician wanted a glass of milk so they stopped at a milk exhibit. He asked to have the milk heated. He then asked the girl to put two tablespoonfuls of honey in the milk. The girl said, "I am sorry but we do not have any honey here." The doctor said, "What! No honey at a milk stand? We always buy our honey in Denmark at milk stands."

Have you heard that Errol Flynn uses honey in his tea? Even actors know that honey improves the flavor of tea.

— o —

The junior division of a Sabbath School at Battle Creek, Michigan, has an investment program and is using the profits from the sale of honey to send to foreign missions.

— o —

In the July issue of the Ladies' Home Journal you will find one of its most attractive and helpful articles on Page 34. Ann Batchelder's "Line A Day" has a picture of bee skeps in a beautiful setting and a poem, "The Bee." There are thirty-one hints that the housewife cannot afford to miss. Hint No. 24—"Ever tried honey in your apple pies? A little bee told me."

— o —

Letters are being received daily from home demonstration agents asking for the Institute literature. Many of the leaflets are being used in connection with the 4H Club demonstration teams this summer.

— o —

The prize-winning honey cookie recipes of 1938 will be available in leaflet form early in September.

— o —

The A. H. I. has been asked to write the material that will be used on the loud speaker at one of the State Fairs. If you desire this material for your Fair, the Institute will be pleased to send you a copy.

—ABJ—

The Effect of Freezing On Drone Brood

A customer of ours placed a frame of brood in a refrigerator for one hour at a temperature just under zero. The worker brood was all killed, but the drones were apparently not affected. The frame was out of the hive about 18 hours. When taken out the brood was not capped. After being put back, the worker cells were all cleaned out, but the drone brood went ahead and developed. The frame was from a queenless colony and queen cells were started after the frame was put back, but it is not known whether they used a frozen egg or carried one up from below. The frame was not left in the hive long enough after for any of the brood to fully develop.

We were surprised to know that the drone brood could withstand such cold without being killed.

S. P. Hodgson & Sons,
B. C., Canada.

The Editor's Answers

Freezing Honey

Does freezing hurt honey?
SOUTH DAKOTA.

Answer.—Freezing does honey no harm, although it is likely to granulate when it is subject to frequent changes of temperature. It can be readily restored to a liquid state by placing the container in a dish of hot water, or keeping it for considerable time in a very warm place.

———ABJ———

Sainfoin

I should like information about the new forage plant, "Sainfoin."
SOUTH DAKOTA.

Answer.—Sainfoin comes from Europe where it is commonly grown for forage, but since as yet it is not generally successful in this country, we cannot give much information as to the proper conditions for its cultivation. It has been tried and failed in a number of places, although for just what reason, I am not sure.

———ABJ———

Drug Plants

Where can I get information on the cultivation of drug plants for bee pasture?
SOUTH DAKOTA.

Answer.—We suggest that you write to the Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C., and ask for the bulletins which they have published on this subject. This should give you direct practical information such as you need. Should you wish a book, the best thing that I know of is "Gardening with Herbs," by Mrs. Helen M. Fox. It is published by the Macmillan Company, 5th Avenue, New York City and sells for $2.50 per copy.

———ABJ———

Moth Infested Combs

Some, but not all, of the combs in my hives are infested with moth. Can these moth infested combs be removed and fumigated? MISSOURI.

Answer.—You can remove the moth infested comb from the hive and stack them up in hive bodies or supers in a single tier. Better place an empty super or hive body underneath the tier. Cover the tier of supers and make everything tight. From a drug store, get a sulphur wick or sulphur candle and burn it in the bottom empty super in a plate or tin pail until it is completely consumed. This should kill all the moth larvae and adult moths, although it is very difficult to get the eggs even with such sulphuring and perhaps a second dose might be desirable.

Of course, one of the best ways to clear out the moth is to put moth infested combs on a strong colony. Strong colonies of bees will not tolerate the presence of moth and will clear them out and patch up the comb where it has been destroyed. This they will do particularly well if they are making honey.

Fumigant

Is there a known way that you can kill the foulbrood bacteria in the honey?
MISSOURI.

Answer.—We know of no fumigant to kill the germs of American foulbrood in combs of honey which have been taken out of the hive. A number of chemical solutions have been tried, but none of them can be recommended. We suggest burning up these infected combs and starting with new frames and new bee comb foundation in well scorched out hives.

———ABJ———

Smoke Fuel

Will saltpeter hurt the bees if I dip a roll of rags in it for fuel? What strength of solution is right? ILLINOIS.

Answer.—Use about a 20 per cent saltpeter solution in water. You had better use a roll of corrugated cardboard, not rags. The rags absorb water and the fuel will not light. After a few damp days, your rag rolls won't be of much use, but your corrugated cardboard keeps dry better. Keep it in a dry place in storage and use it from storage as you need it. If you wish to know which end carries the saltpeter, put some coloring solution in the water with the saltpeter to color the ends of the rolls.

———ABJ———

Using Fermented Honey

I have a few 60-pound cans of alsike honey which fermented. If it is properly heated and strained, would the honey be salable to the retail market or to bakeries, or should I use it for food for my bees?
Ohio.

Answer.—The treatment of the honey would depend on whether the entire body of honey is fermented or just the top layer. Usually in 60-pound cans, it is the first one or two inches that ferment. Sometimes honey in 60-pound cans will ferment enough to cause the tin to bulge, and yet the main-body of the honey itself is not fermented.

When honey is stored in 60-pound cans and granulates, the top portion collects the thinnest liquid left from the dextrose granulation. In this thinner portion yeasts in the air in the can cause some fermentation. The honey will smell and the top honey will taste and the cans may bulge, but if you get down into the body of the honey with a sampling rod, you will find that the honey there is not fermented. Try this. If it is as I say, you can use this honey for feed.

I don't think, however, you will be able to heat it if it is badly fermented. Try a can of it and see. Heat it, strain it, skim off the top, put it in a container and let it stand about a week. If there is no fermentation when the honey is removed, it will be all right. Otherwise, don't use it on the market.

I would not use it either for fall food. It probably would not be good as a winter food. It would be all right in spring. If you use it as a spring feed, in place of syrup, better thin it with half water, boil it one half hour in a covered vessel. Then it will be safe. Remember, it will slop up on the sides of any container and if the steam from the boiling is not allowed to act in sterilizing such honey as may find its way up on the sides of the vessel, as just mentioned, you may not do a good job. So be sure the heating is done in a covered vessel for one half hour diluted with an equal volume of water. This will feed all right in 10-pound friction top feeder pails.

If this honey is to be used for feed, store it in as cool a place as possible if it is not to be used at once. Some fermentation may continue, but not much.

If this honey had been heated last fall at extracting time, probably fermentation would not have taken place, and should it be now heated, I doubt if it would ferment again unless it is stored in containers which allow yeast from the air to recontaminate the honey. We keep covers over our tanks all the time.

———ABJ———

Steam Supply in Honey Houses

Would a house heating steam system have enough pressure to permit my using it in connection with my extracting plant?
Ohio.

Answer.—You would not get sufficient out of a house system for good use in an extracting plant. We have had no experience but in our own extracting house we have a 125-horsepower boiler which delivers all the steam we want in the honey house. However, it will not at the same time deliver steam in the building in which the boiler is housed which is separate from the extracting house itself. Even a boiler of that size has a limited capacity. We should have a larger one.

We do use a lot of steam, however. It comes into the honey house and feeds the extracting knives, Brand melter and runs the flash heater, and for all these purposes, it is delivered at once. The flash heater is heated by a straight steam delivery pipe. At the bottom are holes for escape. It contains a sixty foot half inch coil with honey entering at the base at room temperature and coming out through a top riser at 130 degrees in about five minutes; the water itself in the tank heated by the steam pipe usually gets to about 180 degrees.

In using steam, don't let steam coils or steam delivery pipes come in contact directly with the honey. It always causes burning at contact and this passes off into the honey with a resulting loss in color.

———ABJ———

Cut Comb Honey Equipment

I want to know something about cut comb honey. Are the combs allowed to drain by gravity, or is it possible to mount them in the extractor? How do they transfer the drained combs to the wrapping paper without bruising them? ILLINOIS.

Answer.—The best way to drain the cut combs is to get a bench extractor made to whirl the honey off and then to pack the honey immediately. You can get tongs for handling the honey from your cutting bench to the extractor and from the extractor baskets to the packing paper. Write to the A. G. Woodman Company, Grand Rapids, Michigan for this equipment.

A Candid Report of the Illinois Tour

Photographs by
Carl Killion and
James Dadant

At left, Doc Milum evidently believes in water witching, at least Bier and Krebs dare to grin over it since Doc is actually blind for once.

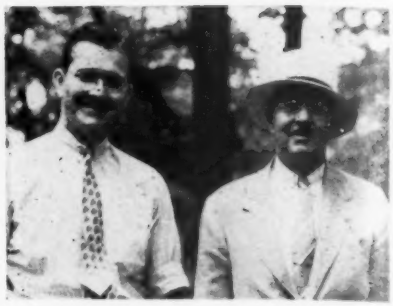
Below, that magnificent Rocke honey house, every bit a job to make most of us ashamed of what we have back home. Center, Frank Durkee had a lot of efficient equipment in small space. (Right) Woodman and Charley Hunt in Ness honey house, talk over large scale hook ups and ten thousand pound runs.

Bob Bier and young Krebs are the type of youngsters now fast entering commercial beekeeping. Milum (in center) has camera trouble. What better help in time of need than Mrs. Kelley? Ernest Root (right) takes his place grandly as the most noted figure in today's beekeeping leadership.

James Dadant, Glory Hallelujah Cale and Bert Woodman must have secrets. Inspector Tyler (in back) may have found out. Above, Virgil Rocke tells a fish story about the one that got away.

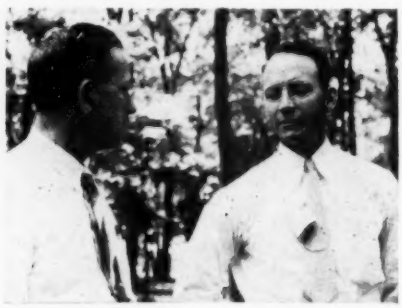
At Elburn, Ross Morrill was in a blue funk. All supers on, bees swarming, and only a hand extractor (Gosh!)

The crowd at Rockford proved summer meetings popular. Three hundred including wives, sweethearts, offspring and such.



Lew Parks brings son Steve from Watertown. Steve may be a baby yet among beekeepers but his smile wins.

Former Chief Kildow and present Chief Killion both fish in Florida. How can there be rivalry between two such fans?



Cale and Farrar may be agreeing or disagreeing, the picture won't tell. At least they are just a bit offish here.

Farrar tells the Freeport crowd about the astonishing crops from two queens in one colony. Believe it or not, he is right.

Texas Convention

By R. H. Dadant,

ON June 23 and 24, the 1939 convention of the Texas Beekeepers Association was royally received and entertained by the host city, Waxahachie, and by the organization of T. W. Burleson & Son, who largely arranged the affair. In the evening of Thursday, June 22, the Burleson home was open to early comers for informal entertainment and refreshments. From that time on, the meeting was well planned, informative, and friendly as could be. Friday night the Waxahachie Chamber of Commerce furnished a barbecued chicken dinner, with musical entertainment afterward. Movies of beekeeping, furnished by the Division of Bee Culture, Washington, D. C., were shown by James I. Hambleton, in charge of the Division.

During the business sessions of the association, the ladies' auxiliary under supervision of the president, Mrs. A. W. Clark, met at Mrs. T. W. Burleson's home.

Presiding over the association meeting was President I. F. Aten, the third of four generations of beekeepers, located now at D'Hanis, near San Antonio. Beside him on the bench was the perennial secretary, H. B. Parks. Mr. Parks is no longer elected to the job of secretary. Several years ago his election was made for a life term, in order to save

At left, Tom Burleson and son Ed, have together built one of the largest businesses in Texas in bee breeding, honey production and honey distribution. (Center) George Oettle, New Jersey (formerly South Africa,) and Guy Le Stourgeon, Editor of Beekeepers' Item". (Right) M. B. Hinton.

Tom Burleson draws the crowd.

Cecil Heard can inspect more bees per inspection hour than any competitor (That'll mow 'em down!)

time at the annual meetings. That's an indication of the regard Texas people have for genial Professor Parks, whose knowledge of beekeeping is probably second to none other in the country.

I'm not just sure whether the boll weevil or Cecil Heard is the worst pest in Texas: the beekeepers kid him a lot, but there never was an inspector who was better liked than Mr. Heard. He and his assistant, W. C. (Bud) O'Neal, start out down in the Rio Grande Valley in February, and in the next ten months, they manage to inspect most of the bees in Texas. In a few isolated localities, there are deputy inspectors who do the job to save them a long trip. The beekeepers tell me they never saw a pair who could go through a yard of bees more quickly and more closely than Heard and O'Neal.

One of the principal speakers was James I. Hambleton, who was making his first visit to a Texas meeting. He outlined the work being done by the Federal field stations, which are engaged in beekeeping research, and went on to give his idea of the trend of beekeeping in the future. Mr. Hambleton, in speaking of the work in Washington, mentioned having escorted Mrs. Franklin D. Roosevelt through the apiary and showing her the inside of a beehive. From behind a bee veil, Mrs. Roosevelt was very interested. Pictures of the incident were printed in many newspapers throughout the country.

George Oettle (pronounced like the last syllables of "absol**utely**") from South Africa and New Jersey, told some tales of the natives of his homeland and their superstitions about beekeeping. E. G. LeStourgeon, editor of Beekeepers Item, prophesied that history would know the present period as one of new birth and new ideas in beekeeping, although today we are too close to it to judge it accurately.

Mrs. Harriett M. Grace, of the American Honey Institute, outlined the work of that organization and its plans for future activities. The Institute is making a big hit with Texas beekeepers. M. B. Hinton, R. H. Dadant, L. C. Dadant, and E. T. Edwards were other speakers on the program.

Another feature of the convention was a tour conducted by T. W. and Ed. Burleson through the Burleson apiaries, extracting house, and packing plant. Their equipment is all modern and efficient and the tour was enlightening to everyone. Every member of the Burleson family is a past master of the art of hospitality. I am sure anyone who was at the convention will tell you that he was shown a real welcome and had an excellent time.

The meeting was at the wrong time of year to catch Texas' adopted beekeepers. Those northern fellows who make Texas their home during the big part of the winter months were all back in the North after the honey crop.

Association officers for next year are Howard Weaver, president; M. B. Hinton, vice-president, and H. B. Parks, secretary. The convention in 1940 will be held at New Braunfels.

R. H. Dadant.

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A Beekeepers' Buzz

Early in 1939 it was learned that Mrs. Harriett M. Grace, director of the American Honey Institute, would attend the National Home Economics convention at San Antonio in June and the annual meeting of the Texas Beekeepers' Association would be held at such a time that Mrs. Grace could meet with the Texas Beekeepers' Association at the close of her attendance on the Home Economic convention.

Knowing that there were many in the San Antonio area who were interested in the use of honey in cookery who could not attend the convention, a Beekeepers' Buzz was planned by the Ladies Auxiliary of the Beekeepers' Association. This Buzz was an informal tea, held in the patio of the Witte Memorial Museum, in Brackenridge Park. The guests of honor were seated on the porch of the pioneer cabin. Refreshments containing honey were served.

Owing to publicity and cooperation of those interested in both the Home Economics Convention and in the use of honey, a large number of well-known authorities and others attended. Among the guests of note were: Mrs. Harriett M. Grace, director of the American Honey Institute; Miss Mary I. Barber, director, Home Economics, Kellogg Company; Director and Mrs. A. B. Conner, Texas Agricultural Experiment Station, Mrs. E. S. Quillin, director, Witte Memorial Museum; Commissioner and Mrs. Henry F. Hein, San Antonio; Mrs. Helen Judy Bond, president, American Home Economics Association; Mrs. Katharine McFarland Ansley, executive secretary, American Home Economics Association; Miss Myrtle Murray, Extension Service, for San Antonio district in Texas; Editor and Mrs. E. G. LeStourgeon, Beekeepers Item. Among those attending were the county home demonstration agents from numerous states, representatives of several of the bureaus

of the United States Department of Agriculture, and of several national advertising and broadcasting companies.

The committee for this Buzz was composed of the following members: Mrs. E. H. Bremer and Mrs. H. B. Parks in charge; Mrs. A. L. Gehrels, Mrs. J. A. Gehrels, Mrs. W. B. Gehrels, Mrs. A. W. Clark, Mrs. I. F. Aten, Mrs. Arthur Erdman, Mrs. M. B. Hinton, Mrs. Fred Sternenberg, Mrs. Alfred Hartl, Mrs. J. Claude Wilson, and Mrs. A. H. Alex.

H. B. Parks,
Secretary-Treasurer.

—o—

Annual Michigan Tour, August 2-4

The Michigan Beekeepers Association is holding its annual series of meetings August 2, 3, and 4. The tour starts at Hillsdale on the second, proceeds to Ithaca on the third, and ends at Traverse City on the fourth.

Baxter Woodman,
Treasurer.

—o—

Wyoming-Livingston Meeting, August 9

The Wyoming-Livingston County (New York) Beekeepers Association will hold their summer meeting and picnic in the village park, in the village of Warsaw, Wyoming County, on Wednesday, August 9. Geo. H. Rea of Cornell University, and M. G. Dadant, of Hamilton, Illinois, will be with us and will speak.

A picnic lunch will be at 12:00 o'clock. Anyone interested in bees and honey is cordially invited to be present.

Fred G. Benedict,
Secretary.

—o—

Batesville, Indiana, August 12

There will be an all day beekeepers' meeting at Batesville, in the city park, beginning at 9:30. There will be speaking and demonstrations.

Arno Uphaus.

—o—

Vermont Beekeepers Association, August 26

The annual Vermont beekeepers' picnic-meeting will be held Saturday, August 26, at 9:30, standard time, at Allis State Forest Park, on Route 12, south of Montpelier, between Northfield and Randolph.

Will Grover, of Bristol, Vermont, will be with us and will give an interesting discussion on bee hunting. We plan to have another speaker. Bring your smoker, bee box and a sample of honey. Prizes will be given for the best "smoker-upper," best bee box, and best sample of honey. Allis Park is on a high mountain and is a beauty spot of Vermont well worth visiting. Remember to bring the family and lunch box. We want everyone to come, Vermonters and visitors from other states.

Charles Mraz,
Secretary.

—o—

Washington State Beekeepers Association

The Washington State Beekeepers Association had a very successful meeting of about seventy of its members at Marysville, June 28. Walter Robinson, director of the State Agricultural Department, discussed the new bee law. This law places a two mill tax on every pound of honey sold from the grocer's shelf, thereby creating a fund which will provide for the inspection of bees. [See page 398.]

M. F. Mommson, secretary of the Pierce County Association, spoke on the value of associations and the work of the bee inspector. C. A. Brown also spoke on the value of inspection and of the duties of the inspector. The Northwest Beekeepers Association of Washington was organized.

Elizabeth Dickerson,
President.

—o—

Northwestern Pennsylvania Beekeepers, August 10

The beekeepers of northwestern Pennsylvania will hold their annual picnic at Canadota Lake on August 10 at 11:00 A. M., E. S. T. There will be a transferring demonstration and numerous contests with prizes.

Ernest Bendure, President,
Erie Co. Beekeepers Assoc.

—o—

Washington State Meeting, August 5

The annual picnic of the Washington State Beekeepers Association will be held Saturday, August 5, at Lake Tipsoe, located in the heart of the Cascade Mountains. It is at the highest point on Chinook Pass, known to some as Naches Pass. A wonderful paved road through breath-taking scenery leads to this place from both east and west sides. We extend a cordial invitation to all beekeepers and their families to come early, bring a basket dinner, and expect a good time. Enjoy the good water, clear, pure air, congenial company, and fine program. Remember the date: August 5.

Mrs. Eva Wixom,
Secretary.

—o—

Empire State Honey Producers, August 12

The annual summer outing of the Empire State Honey Producers' Association will be held August 12, at the Sodus Fruit Farm, located just two miles north of Sodus, New York, on the shore of Lake Ontario, a beautiful spot.

M. E. Buckman, manager of the farm, has promised every available facility of one of the largest and most beautiful fruit farms in the state to make the beekeepers comfortable and happy. There will be ample parking space and a large building in which to hold the meeting in case of rain. Wet or dry, we will have a nice meeting.

H. H. Root, of Medina, Ohio and M. G. Dadant, of Hamilton, Illinois, have promised to attend. New York beekeepers will have a chance to learn something about crop conditions in other parts of the country.

E. T. Cary,
Secretary.

—o—

New Hampshire Beekeepers Association, August 17

The New Hampshire Beekeepers Association will hold its annual meeting during Farmers' and Homemakers' Week at Durham, New Hampshire, on Thursday, August 17. We have been very fortunate in getting Maurice Dadant, of the American Bee Journal, and Roy Grout, of Dadant & Sons Company, to talk at this meeting, and we are very anxious that the beekeepers from the other New England states, Maine, Vermont, Massachusetts, Rhode Island and Connecticut join us on this day. The program is as follows:

Morning

9:30—Business Meeting of N. H. Beekeepers Association.

9:45—Recent Experiences with Package Bees, J. R. Hepler, Assoc. Hort.

10:15—Improving our Bee Pasturage, Jay Haddock, Agronomist.

11:00—Progress of Beekeeping in the U. S., M. G. Dadant, Hamilton, Illinois.

Afternoon

2:00—Beeswax and the Beekeeper, Roy Grout, Hamilton, Illinois.

3:00—Demonstration of handling bees requeening and installing a package into a hive.

J. R. Hepler.

—o—

Southern Conference at Vicksburg, October 30-31

As we begin to round out our season's hard work our thoughts drift to vacations, travel, sightseeing or just plain visiting. Where should we go? What should we do? And when should we do it? Sure we need a day's fishing, a picnic or a neighborly visit every week or two. But about that ten-day vacation. Well, we're removing and packing honey from August to September 10. The bees then need attention, some new queens introduced, and some feeding

or packing. Let's get lined up on the honey market, take care of waiting customers, contact new ones, but hold for our profitable price.

By now it is late October and we're all ready for that ten-day vacation. The weather is fine for traveling, mosquitoes and flies are gone, and nights are cool. Let's take a trip. Where? We've done a lot of traveling, but there's one place we've never been—Vicksburg, Mississippi! Oh sure! Something is going on there this fall. No, not the World's Fair. Much more restful than that. Just a quiet town on the Mississippi where Clay Lyle and M. S. Fortune are inviting you to a fish fry, or something. Two big days on the old Mississippi, where they have boats, cotton, and molasses.

By the way! Some guy by the name of Dowling (bet he's a Georgia Cracker) has said something about a big meeting of beekeepers over there in Mississippi. Believe he said last two days in October. Now doesn't that sound good? And it's timed just right. All of these southern producers headed by such progessive gentlemen as G. G. Puett and H. F. York will be waiting to shake your hand. Then, too, these gentlemen are likely to be about the place; George Bohne, producer of fancy black honey; Bob Foster whose special inspecting equipment consists of a rod and reel; Ned Prevost who lives somewhere in the South but never stays home. Among other strange sights you may expect to see Leslie Lewis nursing a baby, or a bridegroom trying to make a speech. While this is going on, J. M. Robinson will be peeping in at the windows, and L. M. Dewey will be out selling honey to Vicksburg merchants.

Hats off to the Southern Conference! Its members are brothers of one faith. Their efforts are producing results. Their spirit of friendliness waxes deep into the hearts of all they serve. Of the Charleston Conference, last November, two outstanding comments have been:

"The Charleston Conference was one of the most interesting and entertaining meetings I have ever attended. After three days of it I felt rested."

"I have not forgotten the happy days I spent at Charleston. I think that meeting was one of the most outstanding meetings of any kind that I have ever attended."

After attending the Vicksburg meeting, October 30-31, you too, will feel rested, pleased with the many new acquaintances and happy with your wealth of new knowledge.

A. D. Hiett.

— o —

The biggest and best Southern Beekeeping States Federation conference ever held will be at Vicksburg, Mississippi, October 30 and 31. A number of South Carolina beekeepers are hoping to attend, and there are still others we are trying to convince that it will be to their advantage to be at the Vicksburg meeting.

A good get-together is very often beneficial from a financial as well as a social standpoint. Beekeepers must not lose sight of this fact; for, if we are going to progress we must stick together and learn as much as possible about our business. The meeting in Vicksburg should go a long way toward helping us along these lines.

E. S. Prevost.

— o —

Pennsylvania Meeting

The annual picnic of the Pennsylvania State Beekeepers Association will be held August 26 at Harvey's Lake, Luzerne County. The Westmoreland County Association will have a picnic July 20 near Greensburg.

H. M. Snavely,
Secretary.

— o —

Pennsylvania State Beekeepers' Picnic and Field Day, August 26

In the Park of Senator A. J. Sordoni, Alderson, Luzerne Co.

Morning, 9:30—12:00, E. S. T.

J. S. Fleck, President, Pittsburgh.

Get Acquainted Hour—(The first hour will be spent in renewing acquaintances, visiting, meeting new friends and informal discussion.

Address of Welcome — J. D. Hutchinson, County Agent, Wilkes-Barre.

Response—Harry B. Pye, Secretary-Treasurer, Philadelphia Beekeepers' Association.

Use of Honey in the Home—Mrs. J. V. Ellenberger, Troy.

Survey of Seasonal Conditions—E. J. Anderson, Extension Apiarist, State College.

Discussion—Led by L. E. Good, Secretary-Treasurer, Luzerne County Beekeepers Association.

Basket Lunch, 12:00—1:00

Afternoon 1:00—2:30

Honey Heating and Preparation for Market—Roy K. Howell, Saylorsburg.

Honey Marketing — Harry W. Beaver, Troy.

Address — The Economic Importance of the Honeybee—Geo. H. Rea, Extension Apiarist, New York.

Address—(Speaker to be named later.)

Review of Apiary Inspection—H. B. Kirk, Acting Apiary Inspector, Harrisburg.

Discussion—Led by W. J. Robbins, Jr., President Luzerne County Association.

Roll Call of Counties.

Games and Contests 2:30

Led by E. J. Anderson and J. D. Hutchison. The prizes which are given are the contributions from various supply companies. There will also be greetings from representatives who are present from the supply companies.

— o —

Three Ohio District Meetings

These summer meetings are sponsored by county beekeepers' associations, the Ohio Beekeepers Association, and the Extension Service at the Ohio State University. The locations and dates scheduled for these meetings are:

Northern Ohio Meeting, Tiffin, August 9.

Central Ohio Meeting, Harrisburg, August 10.

Northeastern Ohio Meeting—Canadohta Lake (near Union City), Pa., August 11. The northeastern Ohio beekeepers have accepted the kind invitation extended by the western Pennsylvania beekeepers to meet with them at this lake.

The general plan for the Tiffin and Harrisburg meetings is to schedule tours in the forenon of each day, visiting commercial apiaries, honey houses, extracting equipment and other economic points of interest. The afternoon programs will be largely talks on timely subjects presented by speakers of recognized reputation. A beekeepers' banquet will conclude each day's program, where there will be plenty of good entertainment.

The northeastern Ohio beekeepers' meeting is scheduled in cooperation with the big Pennsylvania meeting at Canadohta Lake. This will offer a real outing and vacation trip. Already plans are well underway for an elaborate educational program, which will be well worth attending by beekeepers in northeastern Ohio.

— o —

Southeast Kansas

Southeast Kansas held their picnic July 16 with sixty in attendance not including visitors and friends. Seven counties were represented. A fine basket dinner was served at noon.

Dr. R. L. Parker and Dr. C. E. Smith, of Manhattan, were speakers and guests.

It was one of the best meetings. Everybody was in good spirit. Officers held over for another year were: Wm. Krueger, of Erie, president; J. C. Miller, of Parsons, secretary-treasurer.

Wm. Krueger,
President.

— o —

XII International Congress, Zurich, August 6-9

A. Mayor and O. Morgenthaler, of Switzerland, announce the XII International Apiculture Congress and

QUEENS 40c ea.
E. J. Bordelon, Box 33, Moreauville, La.

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Here we are again, Stevenson's line-bred Goldens. Those large, yellow, gentle bees that do not make your neighbors complain; yet are the best of honey producers. Just what you want. Descriptive circular supplied. Queens 50c; 2-lb. pkg. with queen $1.95; 3-lb. $2.55
Stevensons Apiaries, Westwego, La.

American Bee Journal Classified Ad Bring Satisfactory Results.

meeting of the Apis Club at Zurich, Switzerland, August 6-9, 1939. Most of the papers to be presented at this world congress will be about 15 minutes in length, with abundant time for free sessions and discussions. The languages of the Congress are German, French, Italian and English, with Mlle. Nora Baldensperger as rapid translator.

The partial program includes a discussion of bee diseases, observation on mating, two-queen beekeeping, the Frow treatment, queen-rearing, the formation of mating nuclei, causes of swarming, honey, honey plants, honey markets, with such well-known beekeepers as Baldensperger, Brunnich, R. W. Frow, J. Hedberg, J. Koppan, Lotmer Ruth, Manley R. Benson, B. D. Milojevic, A. Winkel, W. Fyg, A. L. Gregg, Mrs. M. M. Hooper, M. Hunkeler, K. Novacky, H. J. Wadey, F. Schumacher, H. M. Fraser, L. Bahr, E. Basy, E. Karmo, F. Kobel, A. Lehmann, R. Lunder, A. Lundgren, and Anna Maurizio.

In addition to the three-day session, will be a steamer excursion on Lake Zurich, inspection of the apiary of Strickhof Agricultural School, at Zurich, and other excursions to suit the time and place.

The subscription to the Congress will be 3 Swiss francs. Those holding membership cards are entitled to reduced railway fares and entrance fee. Application should be sent to Bienenabteilung, Liebefeld-Berne (or to Dr. Morgenthaler, Liebefeld-Berne, Switzerland.

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Ottawa County (Michigan) August 18

Following is the program for the Ottawa County annual beekeepers' picnic which is to be held jointly with Kent and Muskegon counties at Tunnel Park, north of Holland, Michigan, August 18, beginning at 10:30 A. M.

Officers of the association are: President, N. J. Smith, Coopersville; vice-president, C. F. Barnard, Holland; and secretary and treasurer, A. E. Blink, of Holland.

Speaker for the day are Prof. R. H. Kelty, Michigan State College, East Lansing; Don Barrett, state apiary inspector, Howel; Elmer Carroll, editor of Michigan Beekeeper, Lansing; Court Huggins, Lake Odessa; Baxter Woodman, Grand Rapids; Jay Cowing, Jenison; L. R. Arnold, Ottawa county agricultural agent, Grand Haven; and Colleen C. Lillie, of Coopersville. Music is to be furnished by Shirley Temple and Wanda Hope.

Prizes will be offered by the A. G. Woodman Company, Grand Rapids, Michigan, consisting of one bee smoker, hive tool and bee veil. All wishing to enter the contest for the smoker must bring their smoker and fuel with them. Queen bees will be auctioned to the highest bidder, the queens being donated by local queen breeders. The proceeds will go to the support of the Michigan Honey Institute.

A pot luck dinner will be served at noon. Free ice cream and hot coffee. Some of the topics the speakers will discuss are "Comb Honey," "American Foulbrood," and "Preparing Bees This Fall for Next Year's Honey Crop."

N. J. Smith, Pres.

— o —

South Carolina Association Adopts a Label

We have just learned that the South Carolina State Association decided to market honey under a co-operative label and have had one especially designed and printed for the use of members.

Under the new arrangement, the executive committee, consisting of T. P. Gaskin, of Lykesland, president of the association; J. Floyd Switzer, Roebuck, vice-president; and C. E. Hambree, Newberry, secretary and treasurer, are to comprise the committee to further the cooperative effort. The movement has a great chance of success. It is anticipated to form a marketing association similar to the Peach Growers' Association of South Carolina.

— o —

Marathon County (Wis.) August 6

The annual picnic of the Marathon County Beekeepers Association will be held Aug. 6 at the John Hopperdietzel farm in Athens, Wisconsin. Beekeepers and their families will bring their basket lunch.

The season's bumper crop of honey will be one of the topics of general discussion. Some of the beekeepers have already placed six supers on their hives and report an excellent crop of honey.

According to some, bees have been filling supers in a week's time, a record performance for bees in the Marathon county area. Dutch clover has been very plentiful this year.

Joseph Garre, of Easton, president of the association, who has been making inspections of apiaries in this section for the Wisconsin Department of Agriculture and Markets, reports an increased interest in honey production in sections of the state.

H. C. Brunner,
Wisconsin.

— o —

Midwest Beekeepers' Meeting

The midwest beekeepers' meeting was held at Sioux City, Iowa, on July 10 and 11, consisting of the Iowa Beekeepers' Association, with the Sioux Honey Association and

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BOLLING, ALABAMA
The South's largest breeder of Caucasian Queens

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HONEY PAIL...5 lb., with bail attached. For crystal clear strained honey, or to display honey in chunks.

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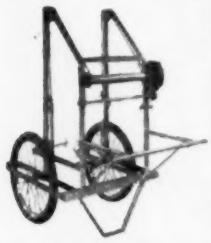

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When Writing Our Advertisers, Please Mention the Bee Journal.

Minnesota, North Dakota, South Dakota and Nebraska associations cooperating. Due to the fact that a heavy flow of honey was on, many of the larger beekeepers in this territory were unable to attend as their bees were crowding them for super room. Speakers on Monday, July 10, were Newman I. Lyle, president of the Iowa Beekeepers' Association; L. H. Koenitzer, Sioux Rapids, Iowa Norris Ellingson, Roseau, Minnesota; W. H. Thompson, vice-president of the Bank of Cooperatives, Omaha, Nebraska; T. W. Burleson, Waxahachie, Texas; and L. C. Dadant, Hamilton, Illinois. A tour of apiaries was made under the guidance of E. C. Brown, president of the Sioux Honey Association.

On Tuesday there were addresses by the following men: L. M. Gates, Lincoln, Nebraska; Frank C. Pellett, Atlantic; and Chas. Hofman, Janesville, Minnesota. An outstanding report of disease resistance of bees was made by Dr. O. W. Park, of Ames, Iowa. In the afternoon, a visit was made to the up-to-date plant of the Sioux Honey Association who handle several million pounds of honey for their members.

Western and northwestern Iowa this year are favored with ideal conditions for a good honeyflow and beekeepers in that territory are to be congratulated.

— o —

New Jersey Field Meet, August 31

A field meeting for beekeepers will be held at Pomona and Atlantic City on Thursday, August 31, 1939, beginning at ten o'clock A. M. Meet in the Pomona Recreation Hall at the Pomona railroad station a few hundred feet off the White Horse Pike. Bring lunch.

In the afternoon we will go to the meadows and see the sea lavender in blossom. This plant is showing considerable possibilities as a source of nectar. We will then proceed to Atlantic City where Mr. Ross Mattis, past president of this association, will provide free facilities for ocean bathing.

Elmer G. Carr,
Secretary-Treasurer.

— o —

Utah Acts Against Spray

Beekeepers of Utah are launching a drive to guard against poison spray by farmers and orchardists, reports George A. Poulter, Weber County bee inspector, of the State Department of Agriculture. Plans are being made throughout the territory for asparagus growers to wait until after the blooming season before spraying, so bees will not get poison while gathering nectar. Ray Whiting, district agricultural inspector, said the spraying would be equally effective, and beemen are cooperating.

Glen Perrins,

— o —

South Carolina Short Course

The short course in beekeeping is to be held at Clemson College, Clemson, South Carolina, on August 21 and 22.

—ABJ—

Honey Discoloration and Loss of Delicate Flavor in Processing and Storage

(Continued from 392)

duced a greater amount of darkening than an average temperature of 77°F. in a controlled temperature storage chamber, the samples at both temperatures being protected from the light.

A critical survey of the information presented in this paper will show that the processing temperatures for the periods commonly used caused relatively little discoloration of honey as compared to that occurring during storage at temperatures above 70°F., and high processing temperatures do not cause greater discoloration during storage subsequently.

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Crop and Market Report

Compiled by M. G. Dadant

For our Crop and Market page, we asked our reporters to answer the following questions:

1. How is the crop compared to last year?
2. Prospects for balance of season?
3. Is honey moving?
4. How are prices compared to 1938?
5. What do you recommend for good clover in carlots? Ton lots? 10-lb. retail? 5-lb. retail? Comb-case to store?

Crop Compared to Last Year

Some sections of New England will have as good a crop as 1938. However, New York is only perhaps 50 per cent and Pennsylvania 70 per cent. The southeastern states will rank just about equal or perhaps a little better than last year, except that Georgia is short in the early crop and Florida will not have normal.

Throughout the South, conditions are approximately normal; Louisiana, perhaps, having a heavier crop than usual whereas Texas is almost a complete failure, particularly in all southern sections. The same failing conditions will apply to New Mexico and Arizona.

Coming into the sweet clover belt, Ohio does not expect over 50 per cent of last year, Indiana perhaps as high as 70 per cent, Illinois nearly normal and Missouri about the same.

Early reports from Michigan would indicate that they are going to have a heavy crop there this year but we do not see how they possibly can have as big a volume as in 1938. Wisconsin prospects early were good but dry weather cut in and undoubtedly their crop will be short, perhaps 50 per cent of last.

As the writer views it, the only section which is really getting a bumper crop, and perhaps greater than last year, is the Missouri Valley beginning about Kansas City and extending north for 50 to 100 miles on both sides. In addition, the good crop zone runs into Kansas and Nebraska where they had a failure last year. Northern Iowa is having a bumper crop as is southern Minnesota. Conditions farther north into Minnesota still were undecided at the writing of this page, but it is doubtful if the crop will equal that of last year.

When we come to the intermountain territory, the eastern slope of Colorado is almost a failure. Wyoming not any more than last year and Montana expecting less. Idaho was a near failure last year and will probably have more, although far from a normal crop. Utah and Nevada seem to be under last year with early reports from Nevada of bees still being fed. On the Pacific coast Washington and Oregon may finish up normal. California, however, is far short, reports being from 30 per cent to 40 per cent of last year's crop. In the Canadian provinces, Ontario will probably be normal and it is possible that the western provinces will have considerably more than last year from early indications.

Crop Prospects Balance of Season

Prospects for the balance of the season differ greatly depending entirely on the weather. In most sections, honey plants seem to be in satisfactory condition and it is always barely possible in sweet clover sections that the honeyflow will extend into August and September whereas in recent years there appears to have been a cut-off in mid-August. With heavy rains in many sections, the fall flow prospects are much improved.

Honey Moving

So far very little honey is moving. Although some sections of the Southeast and East report a fine demand in a retail way.

There seems to be some activity on the part of the buyers on account of the conflicting reports of crop conditions, and also on account of the fact that the California crop has been extremely short. The tendency is, however, to feel the market out and start at a rather low figure.

Prices Compared to 1938

Prices are starting in the extracted honey line at just about where they left off last spring. This is a natural consequence in view of the fact that there was quite a heavy carryover, particularly in the intermountain section. Accordingly, beekeepers may not expect very flattering offers with the early fall season. In fact, we have before us a quotation from a western broker offering carloads of alfalfa honey f. o. b. common shipping point at a price of 4⅝ cents which would make a delivered price slightly over 5 cents at eastern markets.

Price Recommendations

In the carload line, price recommendations varied greatly. One or two producers in the heavy sections of Iowa and Minnesota suggested that it might be necessary to take a price of 4 cents f. o. b. shipping point or a maximum of 5 cents, cans returned, for honey this year.

The bulk of opinions seemed to be, however, that honey should bring at least 5 cents per pound f. o. b. shipping point with many producers suggesting 5½ cents and 6 cents per pound.

The suggestions on ton and pail lots vary so greatly that the writer does not feel in a position to be able to give a justifiable summary of these suggestions.

The following are personal opinions of the writer based on his experience with reports of crop conditions. The crop prices apparently are going to start off at a low figure. We would call it a March bear market. In other words affected by the closing prices last March when distressed lots of honey were still being moved and at low prices.

Probably many quotations will be on a basis of 5 cents delivered or 4 to 4½ cents f. o. b. common shipping points.

The writer believes, however, that the crop this year will run at least 20 per cent under 1938, and that there is no justification for feeling that there is to be a bear market during the entire year.

In fact, it would be my suggestion that good white honey should bring at least 5 cents f. o. b. common shipping point and 5¼ to 5½ cents would be more nearly what the market should be able to pay on the basis of the carryover and the indications for the present crop.

It is true that there are some bumper crop sections but they are not as generally distributed as last year and many sections will have to import honey that were exporting a year ago.

This year's market apparently will be contrary to that of last year, which, though it started briskly, was wrecked partly by the heavy crop and partly by producers wanting to throw their honey on the market, regardless of the price they might expect to get.

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MISCELLANEOUS

BEST BEE HUNTING OUTFIT. Grover, Bristol, Vermont.

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IN THE MID-WEST it's Inland Poultry Journal, one year 25 cents, three years 50 cents. Printcraft Bldg., Indianapolis, Indiana.

Honey for Hearing

From H. C. Mathew, of Virginia, comes a clipping from the food department of "Hospital Topics and Buyer," of December 1938, from which we quote as follows:

Diet forges to the front as a consideration in practically every ill. Latest recommendation is diet as an aid for hearing. Substituting honey for sugar, rye bread and corn meal foods for wheat, and diluted grape juice and water for milk has been found an effective aid in certain cases. So reported Dr. James A. Babbitt of Philadelphia at the American College of Surgeons' meeting in New York.

A study of the body processes indicates that when a block in cell oxidation is present, clinical conditions appear in the epiblastic tissues, of which the ear is one.

As a rule, leaving out white sugar and wheat tended to clear up the impaired hearing of many school children, but if it did not in a week's time, cod liver oil concentrate tablets were prescribed, one a meal, since they contain organic iodine and arsenic, two good oxidizing minerals. Later, if necessary, one drop of a solution of iodine in a glass of water 20 minutes before one or more meals a day was prescribed.

Almost immediate response to the initial adminstration of this treatment followed, sometimes with dramatic improvement. After a varying period of time, the hearing dropped back in many cases, suggesting that the early adminstration was in the nature of a neuro-physiologic stimulus, and that it would require adequate follow-up and continuance of nutritional support.

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La GRANGE, ILL. [Chicago, suburb]

Extracted Honey Wanted

Send sample. Advise quantity and price wanted.

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Thousands of acres of sweet clover and other honey plants that give honey of high yield and fine quality. Favorable localities—Red River Valley, in Minnesota and North Dakota; Milk River Valley; Lower Yellowstone Valley; Valier Project; Kootney Valley, in Montana and Idaho; and the Pacific Coast Region in Oregon and Washington. ● Beekeepers in this country are increasing their holdings and new beekeepers are establishing themselves along the Great Northern Railway in these states. Diversified farming and livestock are similarly favored by low cost production. ● Write for Free Booklet on beekeeping and farming, opportunities, including Low Homeseekers' Round Trip Excursion Rates.

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COLUSA, CALIFORNIA

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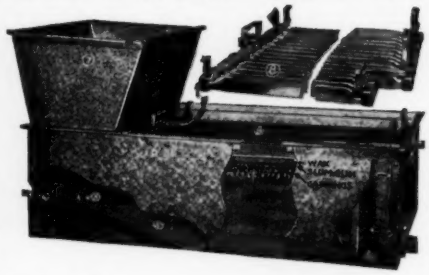

Mr. C. H. Herndon, of Dupont, Ga., the most extensive honey producer in Georgia and one of the most in the South, writes;

"I can say now there is no uncapping method that I ever tried compares with the Brand. I used old type melters, used capping baskets, I bought 8 from you, would fill all and sling dry. I used———method of putting cappings in extractor slinging honey out. In fact I have tried all practical methods, the Brand is far ahead."

In East U. S.
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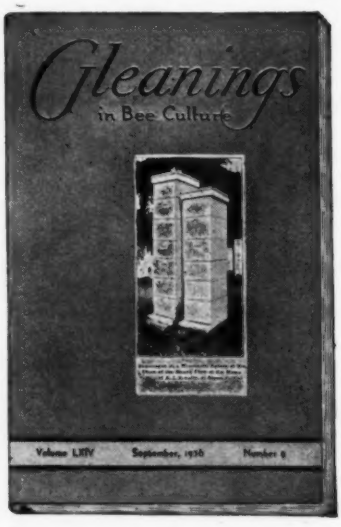

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2½ lb. cans, 100 in carton	$4.00
5 lb. pails, 50 in carton	3.00
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5 gal. cans, 16 in carton	4.64
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50c each.—Lots of 10, 40c each.
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(1) Contacting Home Demonstration Agents in each state, asking them to include their own state Honey in their 1939-40 demonstration programs.

(2) Contacting bakers to induce them to use honey in their products.

(3) Contacting Athletic Directors to get them to try honey for quick energy.

(4) Appearing on radio programs. Have appeared on two national hook-ups already this year.

(5) Preparing for Honey Harvest Week this fall.

(6) Commercial concerns are being contacted constantly.

(7) Co-operating with both World's Fairs.

(8) Preparing radio talks.

(9) Preparing future issues of Institute Inklings.

(10) Continuing work with universities and colleges to have honey included in their food and nutrition classes.

(11) Making contacts between buyers and producers.

(12) Studying the marketing and advertising problems.

(13) Answering inquiries concerning honey.

(14) Supplying printed matter, honey leaflets and booklets.

We don't know how we shall do it but we want to permeate the medical field.

Help Yourself By Helping the Institute

Even $1.00 will help.

SEND REMITTANCES TO AMERICAN HONEY INSTITUTE, MADISON, WIS.

ITALIAN QUEENS CAUCASIAN
YOU NEVER HAD SUCH QUALITY AT SUCH PRICES

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Italian queens 5c less than list. Add 5c per queen for Air Mail.
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The Postscript

A few seeds which came to us in a letter from Australia offer more than usual interest. These are said to be seeds of perennial sweet clover from Siberia. Once established, sweet clover is one of the most persistent of plants until it has bloomed; but sweet clover is a short-lived plant. All strains known in this country are either annual or biennial and die as soon as they have flowered. A sweet clover which will live for many years like other perennial plants should add greatly to the security of the beekeeper, since it would carry over periods of drought. The half dozen plants in our test plots are doing well.

———ABJ———

Bees have worked on our plot of bird's-foot trefoil more freely than on the adjoining plot of alpha sweet clover and the indications are that it may prove to be a good bee plant. It is impossible to tell much about the possibility for honey from a plot of one square rod but next year we look forward to a field test of this crop. It stands the driest weather with no apparent effect and appears to be a valuable addition to the forage crops of this region. We are hoping that it may prove to be well adapted to that portion of the Midwest which is not well suited to the growth of sweet clover.

———ABJ———

J. J. Wilder, of Waycross, Georgia, sends a specimen of a shrubby plant which grows in the forests of that region, with the note that it yields a surplus of white honey from May to July. It is locally called calico-weed but in other places is known as wickey. It is one of the laurels (**Kalmia** or **Kalmiella hirsuta**), rather common to southern woods. The sheep laurel and the mountain laurel are well-known honey plants, but apparently this one has been generally overlooked in our beekeeping literature.

———ABJ———

Austin Floyd, son of the well-known Manitoba provincial apiarist, L. T. Floyd, has been awarded a scholarship for advanced work in landscape architecture at Harvard University. Perhaps the day will come when similar opportunity will be available in the field of advanced bee culture. In view of the increasing importance of the honeybee for pollination there would seem to be a good reason to offer such encouragement for outstanding students.

———ABJ———

An occasional mention of the use of drone brood for fish bait aroused my curiosity as to its value for this purpose. To determine the matter some drone larvae were thrown into the fish pool to see what the goldfish thought of them as food. The indications were that brood would make good bait for there was great excitement among the fish and a grand scramble to get it as long as any remained.

In this region it is not so much a question of the right kind of bait but to find a place where there are any fish to catch. The streams have been so low during the dry seasons that fish have almost disappeared.

———ABJ———

Market gardening is strenuous business in summer with the necessity of having the produce at the market when the stores open in the morning. At times the whole crew at Pellett Gardens get tired with the long days and when opportunity offers, Melvin and his wife, Betty, like to slip away for a few days' fishing. Next time they go I want them to try drone brood for bait.

———ABJ———

Do bees have a preference as to the kind of trees in which to cluster at time of swarming? There is a persimmon tree about 25 years old at the front of our experimental apiary where it would seem to offer a very convenient location for swarms. I do not remember ever having had a swarm cluster in that tree while dozens of swarms have clustered in an apple tree next to it. Sometimes there have been two or more swarms in the apple tree in the same day. Why they never make similar use of the persimmon tree I cannot quite make out. The swarms cluster most frequently in the apple, plum or mulberry trees with an occasional one in a walnut or hickory. Have our readers noted similar preferences?

———ABJ———

H. A. Mark, of Morrill, Nebraska, raises the question as to whether some species of Bidens can be introduced to the seep and swamp lands along the irrigation ditches in his section. The Spanish needles are famous honey plants on wet lands in the Mississippi and Missouri river bottoms and along the Delaware River and in adjacent swamps and in smaller areas in numerous localities. It is said that a complete failure of a honeyflow from Spanish needle in the Delaware River region has never been known. It might well be that there is some species of Bidens well suited to the area which Mr. Mark suggests and which might add substantially to the honey from that region.

———ABJ———

Too little attention has been given to the improvement of bee pastures. In the past the beemen have been content to move to neighborhoods where good honey plants are already established. In areas with little waste land there is little that can be done since the beekeeper must depend upon cultivated crops for his pasture. In the vicinity of swampy sections or where there are large areas of waste land it may be quite possible to introduce new plants which will provide good bee pasture with little effort aside from scattering the seed.

———ABJ———

Because of the burning in 1910, of the plant of the G. B. Lewis Company the firm lacks a complete file of its own catalogs. Any beekeeper who has copies of old catalogs prior to that date will confer a favor by writing to K. Hawkins, Watertown, Wisconsin.

———ABJ———

Inspired by my comment on strawberry clover on this page, in a previous issue Frank Beach, of Burley, Idaho calls attention to the fact that my reference to its growing on ditch banks is hardly correct, as such banks are too dry for it. It is rather to be found in moist places where water stands near the surface.

Our experience with this plant in the test plots indicates that it must have abundant moisture continually to prosper. Our plot started nicely but as soon as the weather turned dry, it began to die at once and made but a poor recovery when the rains came later on.

———ABJ———

H. Bush, of Blenheim, New Zealand, expresses surprise at the report in September, 1938 Journal,of honey from field peas. He has been in the bee business in the midst of hundreds of acres of field peas for twenty-five years with never a bit of honey from this source. He says that if peas yielded honey, Marlboro would be a beekeeper's paradise.

Such surprise reports of honey from plants not commonly known as nectar sources are constantly coming to light. It is never safe to say that given the right conditions a plant may not yield something for the bees.

Bush's report of 14 cents per pound for his entire crop this season sounds like a good price to us here in the states.

FRANK C. PELLETT, Atlantic, Iowa.